



QUIZZES

Practice Test No. 1



5 Questions



5 min

Topics

Coulomb's law

[Start Quiz](#)



1/5



5 min



Hint

Q : Two charges $1\ \mu\text{C}$ and $5\ \mu\text{C}$ separated by 20 cm, the ratio of electric forces acting on them will be:



1 : 2



1:5



1:1



5:1



2/5



5 min



Hint

Q : The force in a medium of relative permittivity ϵ_r is given by



$$F' = \frac{F}{\epsilon_r}$$



$$F' = \frac{\epsilon_r}{F}$$



$$F' = \epsilon_r F$$



$$F' = \frac{F}{\epsilon_0 \epsilon_r}$$



3/5



5 min



Hint

Q : The electric force between two charges placed in air is 2 N. When placed in a medium of $\epsilon_r = 80$, the force reduced to:



0.029 N



0.025 N



0.03 N



0.04 N



4/5



5 min



Hint

Q : The relative permittivity of air is:



97.5



1.006



1.06



1.0006



5/5



5 min



Hint

Q : The force between two similar unit charges placed one meter apart in air is



zero



one newton

 $9 \times 10^9 N$  $9 \times 10^{-9} N$



Correct



Unattempted



Incorrect



1/5

Q : Two charges $1\ \mu\text{C}$ and $5\ \mu\text{C}$ separated by 20 cm, the ratio of electric forces acting on them will be:



1 : 2



1:5



1:1



5:1

Explanation

According Newton's third law, $F_{12} = F_{21}$.



Correct



Unattempted



Incorrect



2/5

Q : The force in a medium of relative permittivity ϵ_r is given by



$$F' = \frac{F}{\epsilon_r}$$



$$F' = \frac{\epsilon_r}{F}$$



$$F' = \epsilon_r F$$



$$F' = \frac{F}{\epsilon_0 \epsilon_r}$$

Explanation

$$F_{med} = \frac{F_{vac}}{\epsilon_r}$$



Correct



Unattempted



Incorrect



3/5

Q : The electric force between two charges placed in air is 2 N. When placed in a medium of $\epsilon_r = 80$, the force reduced to:



0.029 N



0.025 N



0.03 N



0.04 N

Explanation

$$F_{med} = \frac{F_{vac}}{\epsilon_r} = \frac{2}{80} = 0.025N$$



Correct



Unattempted



Incorrect



4/5

Q : The relative permittivity of air is:



97.5



1.006



1.06



1.0006

Explanation

$$\epsilon_r = 1.0006$$



Correct



Unattempted



Incorrect



5/5

Q The force between two similar unit charges placed one meter apart in air is



zero



one newton



$9 \times 10^9 N$



$9 \times 10^{-9} N$

Explanation

$$F = k \frac{q_1 q_2}{r^2} = k \frac{(1)(1)}{1} = k$$

$$F = 9 \times 10^9 N$$

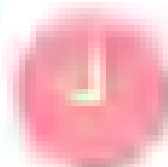


QUIZZES

Practice Test No. 2



5 Questions



5 min

Topics

Fields of Force

Start Quiz



1/5



5 min



Hint

Q The force experience by unit positive charge placed at a point in an electric field is called



Coulomb's force



Faraday's force



Lorentz's force



Electric field intensity



2/5



5 min



Hint

Q A charge of 2 coulomb is in a field of intensity 2 N/C The force on charge is

 $4 \pi N$ 

4 N



0 N



1 N





3/5



5 min



Hint

Q An electric field cannot deflect:



X-rays

 α - particles β - particles

none of these



4/5



5 min



Hint

Q When a dielectric is placed in an electric field, it is:



change



polarized



remains unchanged



none of these



5/5



5 min



Hint

Q · A charge of $1 \mu\text{C}$ experiences a force of 10^{-6} N at a point then the electric intensity at that point is

 10^6 NC^{-1}  10^{-6} NC^{-1}  10^{-12} NC^{-1}  1 NC^{-1} 



Correct



Unattempted



Incorrect



1/5

Q The force experience by unit positive charge placed at a point in an electric field is called



Coulomb's force



Faraday's force



Lorentz's force



Electric field intensity

Explanation

Definition



Correct



Unattempted



Incorrect



2/5

Q A charge of 2 coulomb is in a field of intensity 2 N/C The force on charge is

 $4\pi N$ 

4 N



0 N



1 N

Explanation

$$E = \frac{F}{q} \Rightarrow F = qE = 2 \times 2 = 4N$$



Correct



Unattempted



Incorrect



3/5

Q . An electric field cannot deflect:



X-rays



α - particles



β - particles



none of these

Explanation

For X-rays ($q = 0$), $F = qE = (0)E = 0$



Correct



Unattempted



Incorrect



4/5

Q When a dielectric is placed in an electric field, it is



change



polarized



remains unchanged



none of these



Correct



Unattempted



Incorrect



5/5

Q · A charge of $1 \mu\text{C}$ experiences a force of 10^{-6} N at a point then the electric intensity at that point is



10^6 NC^{-1}



10^{-6} NC^{-1}



10^{-12} NC^{-1}



1 NC^{-1}

Explanation

$$E = \frac{F}{q} = \frac{10^{-6}}{10^{-6}} = 1 \text{ NC}^{-1}$$

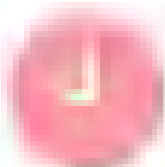


QUIZZES

Practice Test No. 3



5 Questions



5 min

Topics

Electric Field Lines

Start Quiz



1/5



5 min



Hint

Q The electric field created by positive charge is



radially outward



radially inward



circular



zero



3/5



5 min



Hint

Q Michael Faraday was known by his work on



electric force



weak nuclear force



strong nuclear force



gravitational force



4/5



5 min



Hint

Q In case of two identical charges placed at certain distance, the electric force are



curved



straight lines



both A and B



none of these





5/5



5 min



Hint

Q The electric field exist around



charges



on the left side



At the negative charge



At the positive charge





Correct



Unattempted



Incorrect



1/5

Q The electric field created by positive charge is



radially outward



radially inward



circular



zero

Explanation

Behavior of positive charge electric field



Correct



Unattempted



Incorrect



2/5

Q The concept of an electric field lines is introduced by



Coulomb



Faraday



Einstein



Joseph Henry

Explanation

Information



Correct



Unattempted



Incorrect



3/5

Q Michael Faraday was known by his work on



electric force



weak nuclear force



strong nuclear force



gravitational force



Correct



Unattempted



Incorrect



4/5

Q In case of two identical charges placed at certain distance, the electric force are



curved



straight lines



both A and B



none of these



Correct



Unattempted



Incorrect



5/5

Q . The electric field exist around



charges



on the left side



At the negative charge



At the positive charge

Explanation

Intrinsic property of charge

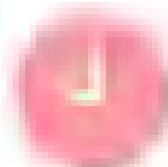


QUIZZES

Practice Test No. 4



5 Questions



5 min

Topics

Application of Electro

nkje

Start Quiz



1/5



5 min



Hint

Q The practical application of electrostatic is.



photocopier



X-rays machines



laser



all of above



2/5



5 min



Hint

Q Photocopier and inkjet printer are the applications of



magnetism



electricity



electro magnetism



electrostatics



3/5



5 min



Hint

Q One of the practical application of electro static induct on is



laser



X-rays machine



photo copier



Wilson cloud chamber





4/5



5 min



Hint

Q · The toner of the printer is given



positive charge



negative charge



neutral



first positive then negative



5/5



5 min



Hint

Q An inkjet printer uses _____ in its operation



positrons



neutrons



an electric charge



photons





Correct



Unattempted



Incorrect



1/5

Q The practical application of electrostatic is



photocopier



X-rays machines



laser



all of above



Correct



Unattempted



Incorrect



2/5

Q Photocopier and inkjet printer are the applications of



magnetism



electricity



electromagnetism



electrostatics



Correct



Unattempted



Incorrect



3/5

Q One of the practical application of electro static induct on is



laser



X-rays machine



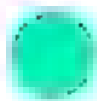
photo copier



Wilson cloud chamber

Explanation

Photocopier and Inkjet are application of electrostatics



Correct



Unattempted



Incorrect



4/5

Q . The toner of the printer is given,



positive charge



negative charge



neutral



first positive then negative

Explanation

Dry powder having negative charge



Correct



Unattempted



Incorrect



5/5

Q : An Inkjet printer uses _____ in its operation



positrons



neutrons



an electric charge



photons



QUIZZES

Practice Test No. 5



5 Questions



5 min

Topics

Electric Flux

Start Quiz



1/5



5 min



Hint

Q What does Nm^2C^{-1} stand for quantity?



electric field



electric potential



electric flux



electric force



2/5



5 min



Hint

Q The flux through any closed surface will be maximum, if its surface makes angle with the electric field of

 0°  90°  180°  45° 



3/5



5 min



Hint

Q When vector area is parallel to electric intensity, the electric flux is



maximum



minimum



zero



constant





4/5



5 min



Hint

Q The number of electric field lines passing through a certain element of area is called



Electric lines of force



electric intensity



electric flux



none of these





5/5



5 min



Hint

Q The electric flux through any surface depends upon.



area of surface



direction of surface



electric intensity



both A and B





Correct



Unattempted



Incorrect



1/5

Q What does Nm^2C^{-1} stand for quantity?



electric field



electric potential



electric flux



electric force



Correct



Unattempted



Incorrect



2/5

Q The flux through any closed surface will be maximum, if its surface makes angle with the electric field of

 0°  90°  180°  45°

Explanation

For perpendicular, placed surface flux is maximum.



Correct



Unattempted

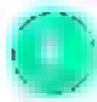


Incorrect



3/5

Q When vector area is parallel to electric intensity, the electric flux is



maximum



minimum



zero



constant

Explanation

$$\phi = EA \cos 0^\circ = EA$$



Correct



Unattempted



Incorrect



4/5

Q The number of electric field lines passing through a certain element of area is called



Electric lines of force



electric intensity



electric flux



none of these

Explanation

Definition



Correct



Unattempted



Incorrect



5/5

Q The electric flux through any surface depends upon



area of surface



direction of surface



electric intensity



both A and B

Explanation

$$\phi_e = \vec{E} \cdot \vec{A}$$

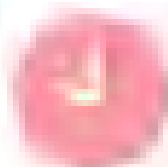


QUIZZES

Practice Test No. 6



3 Questions



5 min

Topics

Chemistry | Biology | Physics | Mathematics | General Knowledge

Start Quiz



1/3



5 min



Hint

Q Electric flux through a closed surface does not depend upon



its shape



medium



charge



none of these



2/3



5 min



Hint

Q Total flux through a closed surface depends on



shape of surface



charge enclosed only



medium only



charge and medium



3/3



5 min



Hint

Q The surface charge density is defined as:



charge per unit volume



charge per unit mass



mass per unit area



charge per unit area





Correct



Unattempted



Incorrect



1/3

Q Electric flux through a closed surface does not depend upon



its shape



medium



charge



none of these

Explanation

Electric flux depend upon charge and medium



Correct



Unattempted



Incorrect



2/3

Q Total flux through a closed surface depends on



shape of surface



charge enclosed only



medium only



charge and medium

Explanation

$$\phi_e = \frac{q}{\epsilon_0}$$



Correct



Unattempted



Incorrect



3/3

Q The surface charge density is defined as.



charge per unit volume



charge per unit mass



mass per unit area



charge per unit area

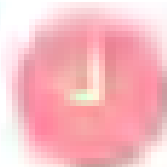


QUIZZES

Practice Test No. 7



5 Questions



5 min

Topics

ss Law

Start Quiz



1/5



5 min



Hint

Q Gauss's law is applied to calculate the



electric intensity due to different charge configuration



electric intensity due to negative charges only



electric intensity due to positive charges only



none of these



2/5



5 min



Hint

Q Gaussian surface is a



imaginary surface



an open surface



curved surface



plane surface





3/5



5 min



Hint

Q The total number of lines of force passing out of any closed surface is equal to.



$$4\pi\epsilon_0$$



$$\frac{1}{4\pi\epsilon_0}$$



$$\frac{1}{\epsilon_0} \times Q$$



$$\frac{1}{\epsilon_0 Q}$$



4/5



5 min



Hint

Q - Gauss's law can only be applied to



surface of any shape



plane surface



closed surface



a curved surface





5/5



5 min



Hint

Q According to Gauss's law $\phi_e \times \epsilon_0$ is equal to



charge



electric intensity



force



none





Correct



Unattempted



Incorrect



1/5

Q Gauss's law is applied to calculate the



electric intensity due to different charge configuration



electric intensity due to negative charges only



electric intensity due to positive charges only



none of these

Explanation

Gauss's law is used to find electric intensity



Correct



Unattempted



Incorrect



2/5

Q . Gaussian surface is a



imaginary surface



an open surface



curved surface



plane surface

Explanation

Imaginary surface around charge



Correct



Unattempted



Incorrect



3/5

Q The total number of lines of force passing out of any closed surface is equal to.



$$4\pi\epsilon_0$$



$$\frac{1}{4\pi\epsilon_0}$$



$$\frac{1}{\epsilon_0} \times Q$$



$$\frac{1}{\epsilon_0 Q}$$

Explanation

$$\phi_e = \frac{Q}{\epsilon_0}$$



Correct



Unattempted



Incorrect



4/5

Q : Gauss's law can only be applied to



surface of any shape



plane surface



closed surface



a curved surface

Explanation

Condition of Gauss's law



Correct



Unattempted



Incorrect



5/5

Q According to Gauss's law $\phi_e \times \epsilon_0$ is equal to



charge



electric intensity



force



none

Explanation

$$\phi_e = \frac{Q}{\epsilon_0}$$

$$\phi_e \times \epsilon_0 = Q$$



QUIZZES

Practice Test No. 8



5 Questions



5 min

Topics

Electric field inside a hollow charge
intensity due to an infinite
charged parallel plate

Start Quiz



1/5



5 min



Hint

Q · If $\vec{E} = \frac{\sigma}{2\epsilon_0} \hat{r}$, the unit vector \hat{r} is:



shows the direction of electric intensity



directed from negative to positive plate



directed towards the positive plate



none of these



2/5



5 min



Hint

Q The interior of a hollow charged metal sphere is a region which is:



full of electric field lines



field free region



both A and B



none of these





3/5



5 min



Hint

Q A charged conductor has charge on its



inner surface



outer surface



middle point



surrounding space





4/5



5 min



Hint

Q

If σ is the surface charge density and A is the area of Gaussian surface then charge enclosed by it is



$$\frac{A}{\sigma}$$



$$\frac{\sigma}{A}$$



$$\sigma A$$



$$\sigma - A$$





5/5



5 min



Hint

Q $\vec{E} = \frac{\sigma}{\epsilon_0} \hat{r}$ In this formula \hat{r} is



unit vector directed from positive to negative plate



unit vector directed from negative to positive plate



vector directed from positive to negative plate



vector directed from negative to positive plate





Correct



Unattempted



Incorrect



1/5

Q · If $\vec{E} = \frac{\sigma}{2\epsilon_0} \hat{r}$, the unit vector \hat{r} is:



shows the direction of electric intensity



directed from negative to positive plate



directed towards the positive plate



none of these

Explanation

$\frac{\sigma}{2\epsilon_0}$ is magnitude, \hat{r} represent direction



Correct



Unattempted



Incorrect



2/5

Q The interior of a hollow charged metal sphere is a region which is:



full of electric field lines



field free region



both A and B



none of these

Explanation

Inside $q = 0$ so $E = 0$



Correct



Unattempted



Incorrect



3/5

Q A charged conductor has charge on its



inner surface



outer surface



middle point



surrounding space

Explanation

Charge on the body of sphere



Correct



Unattempted



Incorrect



4/5

Q

If σ is the surface charge density and A is the area of Gaussian surface then charge enclosed by it is:



$$\frac{A}{\sigma}$$



$$\frac{\sigma}{A}$$



$$\sigma A$$



$$\sigma - A$$



Correct



Unattempted



Incorrect



5/5

Q: $\vec{E} = \frac{\sigma}{\epsilon_0} \hat{r}$ In this formula \hat{r} is



unit vector directed from positive to negative plate



unit vector directed from negative to positive plate



vector directed from positive to negative plate



vector directed from negative to positive plate



QUIZZES

Practice Test No. 9



5 Questions



5 min

Topics

a point charge

Start Quiz



QUIZZES

Practice Test No. 9



5 Questions



5 min

Topics

a point charge

Start Quiz



1/5



5 min



Hint

Q In relation $E = -\frac{\Delta V}{\Delta r}$ then negative sign indicates that the direction of E is along the



increasing potential



decreasing potential



zero potential



none of these



2/5



5 min



Hint

Q The general expression for electric potential V_r at a distance r from q is



$$V_r = 4\pi\epsilon_0 \frac{q}{r}$$



$$V_r = \frac{1}{k} \frac{q}{r}$$



$$V_r = k \frac{q}{r}$$



$$V_r = \frac{1}{4\pi\epsilon_0} \frac{r}{q}$$





3/5



5 min



Hint

Q Coulomb multiplied by volt gives the unit called



Ohm



Bolt



Ampere



Joule





4/5



5 min



Hint

Q Which of the following units is different from the other?



electron-volt



Watt hour



joule



volt





5/5



5 min



Hint

Q Unit of electric intensity other than NC^{-1}



V/A



m/V



V/m



V/C





Correct



Unattempted



Incorrect



1/5

Q In relation $E = -\frac{\Delta V}{\Delta r}$ then negative sign indicate that the direction of E is along the



increasing potential



decreasing potential



zero potential



none of these

Explanation

Negative sign indicate, electric potential decrease in the direction of electric field



Correct



Unattempted



Incorrect



2/5

Q The general expression for electric potential V_r at a distance r from q is



$$V_r = 4\pi\epsilon_0 \frac{q}{r}$$



$$V_r = \frac{1}{k} \frac{q}{r}$$



$$V_r = k \frac{q}{r}$$



$$V_r = \frac{1}{4\pi\epsilon_0} \frac{r}{q}$$

Explanation

Formula



Correct



Unattempted



Incorrect



3/5

Q Coulomb multiplied by volt gives the unit called



Ohm



Bolt



Ampere



Joule

Explanation

$$V = \frac{W}{q} \Rightarrow W = q \times V = J = V \times C$$



Correct



Unattempted



Incorrect



4/5

Q Which of the following units is different from the other?



electron-volt



Watt hour



joule



volt

Explanation

Electron-volt, watt-hour and Joule is unit of energy



Correct



Unattempted



Incorrect



5/5

Q Unit of electric intensity other than NC^{-1}



V/A



m/V



V/m



V/C



QUIZZES

Practice Test No. 10



5 Questions



5 min

Topics

and Electric Forces

Start Quiz



1/5



5 min



Hint

Q A particle carrying a charge of $2e$ falls through potential difference of $3V$ Energy acquired by it is

 $9.6 \times 10^{-16} \text{ J}$  $9.6 \times 10^{-20} \text{ J}$  $9.6 \times 10^{-15} \text{ J}$  $9.6 \times 10^{-19} \text{ J}$



2/5



5 min



Hint

Q · 1 Joule = _____

 $6.25 \times 10^{18} \text{ eV}$  $6.25 \times 10^{18} \text{ eV}$  $6.25 \times 10^{-19} \text{ eV}$  $6.25 \times 10^{-31} \text{ eV}$ 



3/5



5 min



Hint

Q - Charge on an electron is

 $1.6 \times 10^{-19} \text{C}$  $1.6 \times 10^{+19} \text{C}$  $9.1 \times 10^{-19} \text{C}$  $9.1 \times 10^{-27} \text{C}$ 



4/5



5 min



Hint

Q A particle having $2e$ charge falls through a potential difference of $5V$
Energy acquired by it is _____



2.5 eV



20 eV



0.4 eV



10 eV





5/5



5 min



Hint

Q Electron Volt is the unit of



potential



potential difference



electric current



electric energy





Correct



Unattempted



Incorrect



1/5

Q A particle carrying a charge of $2e$ falls through potential difference of $3V$ Energy acquired by it is

 $9.6 \times 10^{-16} \text{ J}$  $9.6 \times 10^{20} \text{ J}$  $9.6 \times 10^{-15} \text{ J}$  $9.6 \times 10^{-19} \text{ J}$

Explanation

$$\Delta K E = q\Delta V = (2 \times 1.6 \times 10^{-19})(3) = 9.6 \times 10^{-19} \text{ J}$$



Correct



Unattempted



Incorrect



2/5

Q. 1 Joule = _____



$6.25 \times 10^{18} \text{ eV}$



$6.25 \times 10^{18} \text{ eV}$



$6.25 \times 10^{19} \text{ eV}$



$6.25 \times 10^{31} \text{ eV}$

Explanation

$$1\text{eV} = 1.6 \times 10^{-19} \text{ J}$$

$$1\text{J} = 6.25 \times 10^{18} \text{ eV}$$



Correct



Unattempted



Incorrect



3/5

Q . Charge on an electron is



$1.6 \times 10^{-19} \text{C}$



$1.6 \times 10^{+19} \text{C}$



$9.1 \times 10^{-19} \text{C}$



$9.1 \times 10^{-27} \text{C}$

Explanation

$$1e = 1.6 \times 10^{-19} \text{C}$$



Correct



Unattempted



Incorrect



4/5

Q A particle having $2e$ charge falls through a potential difference of $5V$.
Energy acquired by it is



2.5 eV



20 eV



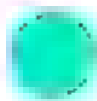
0.4 eV



10 eV

Explanation

$$\Delta K.E = \Delta V = (2e)(5V) = 10eV$$



Correct



Unattempted



Incorrect



5/5

Q . Electron Volt Is the unit of



potentia



potentia, d fference



electric current



electric energy

Explanation

$$1\text{eV} = 1.6 \times 10^{-19} \text{J}$$

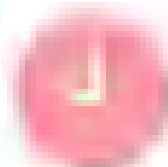


QUIZZES

Practice Test No. 11



5 Questions



5 min

Topics

Start Quiz



1/5



5 min



Hint

Q Millikan and Fletcher could determine the charge on oil droplets in



thermal equilibrium



electrical equilibrium



mechanical equilibrium



unstable equilibrium



2/5



5 min



Hint

Q Electrostatic force is _____ force



attractive



repulsive force



may be attractive or repulsive



none of these





3/5



5 min



Hint

Q The charge on the electron was measured by Millikan in



1909



1905



1900



1910





4/5



5 min



Hint

Q The smallest possible charge which a particle can have is

 $0.2 \times 10^{-19} \text{ C}$  $0.8 \times 10^{-19} \text{ C}$  $1.6 \times 10^{-19} \text{ C}$  $3.2 \times 10^{-19} \text{ C}$ 



5/5



5 min



Hint

Q Millikan and Fletcher could determine the charge on oil droplets in



thermal equilibrium



electrical equilibrium



mechanical equilibrium



unstable equilibrium





Correct



Unattempted



Incorrect



1/5

Q Millikan and Fletcher could determine the charge on oil droplets in



thermal equilibrium



electrical equilibrium



mechanical equilibrium



unstable equilibrium

Explanation

$$F_e = F_g$$



Correct



Unattempted



Incorrect



2/5

Q . Electrostatic force is _____ force



attract ve



repulsive force



may be attractive or repulsive



none of these



Correct



Unattempted



Incorrect



3/5

Q The charge on the electron was measured by Millikan in



1909



1905



1900



1910

Explanation

Information



Correct



Unattempted



Incorrect



4/5

Q The smallest possible charge which a particle can have is



$0.2 \times 10^{-19} \text{ C}$



$0.8 \times 10^{-19} \text{ C}$



$1.6 \times 10^{-19} \text{ C}$



$3.2 \times 10^{-19} \text{ C}$

Explanation

$$q_{\min} = e = 1.6 \times 10^{-19} \text{ C}$$



Correct



Unattempted



Incorrect



5/5

Q Millikan and Fletcher could determine the charge on oil droplets in



thermal equilibrium



electrical equilibrium



mechanical equilibrium



unstable equilibrium

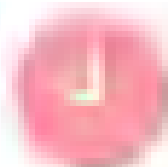


QUIZZES

Practice Test No. 12



5 Questions



5 min

Topics

Capacitor

Start Quiz



1/5



5 min



Hint

Q The formula for energy density is valid for only



at points of high field strength



at points of low field strength



at points of intermediate field strength



at all points



2/5



5 min



Hint

Q - Capacitor is a device used for:



storing charge



storing direct current



storing alternating current



storing voltage





3/5



5 min



Hint

Q Farad is the unit of



capacitance



conductance



current



electric flux





4/5



5 min



Hint

Q A capacitor's capacitance can be increased by



increasing the area



decreasing the distance



placing the dielectric



all of above





5/5



5 min



Hint

Q The circuit having combined components resistance and capacitor is called



R-L circuit



R-C circuit



R-L-C circuit



R I circuit





Correct



Unattempted



Incorrect



1/5

Q The formula for energy density is valid for only



at points of high field strength



at points of low field strength



at points of intermediate field strength



at all points



Correct



Unattempted

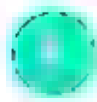


Incorrect



2/5

Q . Capacitor is a device used for



storing charge



storing direct current



storing alternating current



storing voltage

Explanation

Definition





Correct



Unattempted



Incorrect



3/5

Q . Farad is the unit of



capacitance



conductance



current



electric flux

Explanation

$$C = \frac{Q}{V} \Rightarrow 1F = \frac{1C}{1V}$$



Correct



Unattempted



Incorrect



4/5

Q A capacitor's capacitance can be increased by



increasing the area



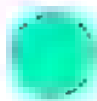
decreasing the distance



placing the dielectric



all of above



Correct



Unattempted



Incorrect



5/5

Q The circuit having combined components resistance and capacitor is called



R-L circuit



R-C circuit



R-L-C circuit



RLC circuit

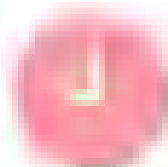


QUIZZES

Practice Test No. 13



5 Questions



5 min

Topics

Start Quiz



1/5



5 min



Hint

Q Capacitance of a capacitor in vacuum is given by



$$\frac{A\epsilon_r}{d}$$



$$\frac{A\epsilon_r}{d}$$



$$\frac{Ad}{\epsilon_r}$$



$$\frac{A}{\epsilon_r d}$$



2/5



5 min



Hint

Q Capacitance of a capacitor does not depend upon



distance between plates



area of plates



electric field between plates



medium between plates





3/5



5 min



Hint

Q Capacitance of a capacitor does not depend upon



distance between plates



area of plates



electric field between plates



medium between plates





4/5



5 min



Hint

Q Capacitance of parallel plate capacitor is



$$\epsilon_0 d / A$$



$$\epsilon_0 A / d$$



$$A / \epsilon_0 d$$



$$d / \epsilon_0 A$$





5/5



5 min



Hint

Q When d electric is placed between the plates of capacitors, the value of Electric field between the plates



increases



zero



decreases



infinite





Correct



Unattempted



Incorrect



1/5

Q Capacitance of a capacitor in vacuum is given by



$$\frac{A\epsilon_0}{d}$$



$$\frac{A\epsilon_r}{d}$$



$$\frac{Ad}{\epsilon_r}$$



$$\frac{A}{\epsilon_r d}$$

Explanation

Formula $C = \frac{A\epsilon_0}{d}$



Correct



Unattempted



Incorrect



2/5

Q Capacitance of a capacitor does not depend upon



distance between plates



area of plates



electric field between plates



medium between plates

Explanation

$$C = \frac{A\epsilon_0}{d}$$



Correct



Unattempted



Incorrect



3/5

Q Capacitance of a capacitor does not depend upon



distance between plates



area of plates



electric field between plates



medium between plates



Correct



Unattempted



Incorrect



4/5

Q Capacitance of parallel plate capacitor is



$$\epsilon_0 d / A$$



$$\epsilon_0 A / d$$



$$A / \epsilon_0 d$$



$$d / \epsilon_0 A$$



Correct



Unattempted



Incorrect



5/5

Q When a dielectric is placed between the plates of capacitors, the value of Electric field between the plates



increases



zero



decreases



infinite

Explanation

Due to dielectric potential difference decrease, so $E = \frac{V}{d}$

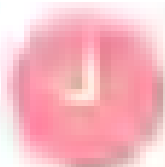


QUIZZES

Practice Test No. 14



4 Questions



5 min

Topics

Electric Polarization of Dielectrics

Start Quiz



1/4



5 min



Hint

Q Introduction of dielectric increase_____



Electric field



Potential difference



Charge



None



2/4



5 min



Hint

Q Two equal and opposite charges separated by a small distance are said to be



tripole



polaroid



monopole



dipole





3/4



5 min



Hint

Q Under the action of electric field molecules of a dielectric



begin to vibrate



become electric dipole



are ionized



are charged



4/4



5 min



Hint

Q The increase in capacitance of a capacitor due to presence of dielectric is due to _____ dielectric.



electric polarization



electrification



ionization



electrolysis





Correct



Unattempted



Incorrect



1/4

Q . Introduction of dielectric increase_____



Electric field



Potential difference



Charge



None

Explanation

$$C = \frac{Q}{V}$$

In case of dielectric

$$C \propto \frac{1}{V}$$



Correct



Unattempted



Incorrect



2/4

Q Two equal and opposite charges separated by a small distance are said to be



tripole



polaroid



monopole



dipole

Explanation

Definition of dipole



Correct



Unattempted



Incorrect



3/4

Q Under the action of electric field, molecules of a dielectric



begin to vibrate



become electric dipole



are ionized



are charged

Explanation

Two opposite charges small separation make dipole.



Correct



Unattempted



Incorrect



4/4

Q The increase in capacitance of a capacitor due to presence of dielectric is due to _____ dielectric.



electric polarization



electrification



ionization



electrolysis

Explanation

Dipole concept



QUIZZES

Practice Test No. 15



5 Questions



5 min

Topics

discharging of a capacitor

Start Quiz



1/5



5 min



Hint

Q Energy density in case of a capacitor is always proportional to

 ϵ^2  ϵ_0  V^2 

C



2/5



5 min



Hint

Q When RC circuit is connected across a battery amount of charge deposited on plates is _____ times the equilibrium charge after one time constant



0.63



0.67



0.75



0.86





3/5



5 min



Hint

Q If RC is small, then capacitor will be charged and discharged



slowly



with medium speed



quickly



A and C





4/5



5 min



Hint

Q Capacitance of capacitor is C , can store energy E than $\sqrt{\frac{2E}{C}}$ is equal to



Q



V



W

 ϵ_0 



5/5



5 min



Hint

Q The product of resistance and capacitance is



velocity



force



accelerat on



time





Correct



Unattempted



Incorrect



1/5

Q Energy density in case of a capacitor is always proportional to



E^2



ϵ_0



V^2



C

Explanation

$$E = \frac{1}{2} \epsilon_r \epsilon_0 E^2$$



Correct



Unattempted



Incorrect



2/5

Q When RC circuit is connected across a battery amount of charge deposited on plates is times the equilibrium charge after one time constant



0.63



0.67



0.75



0.86

Explanation

$$q = 63\% \text{ of } q_0 = 0.63 q_0$$



Correct



Unattempted



Incorrect



3/5

Q If RC is small, then capacitor will be charged and discharged



slowly



with medium speed



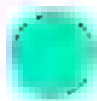
quickly



A and C

Explanation

$$\tau = (RC)$$



Correct



Unattempted



Incorrect



4/5

Q Capacitance of capacitor is C , can store energy E than $\sqrt{\frac{2E}{C}}$ is equal to



Q



V



W



ϵ_0

Explanation

$$E = \frac{1}{2} CV^2$$

$$\therefore V = \sqrt{\frac{2E}{C}}$$



Correct



Attempted



Incorrect



4/5

Q . Capacitance of capacitor s C, can store energy E than $\sqrt{\frac{2E}{C}}$ is equal to



Q



V



W



ϵ_0

Explanation

$$E = \frac{1}{2} CV^2$$

$$V^2 = \frac{2E}{C} \Rightarrow V = \sqrt{\frac{2E}{C}}$$



Correct



Unattempted



Incorrect



5/5

Q The product of resistance and capacitance is



velocity



force



accelerat on



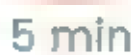
time

Explanation

$$\tau = RC$$



Practice Test No. 16



Topics

conducito

[Start Quiz](#)



1/5



5 min



Hint

Q The charge carriers in metallic conductors are



free electrons



electrons



electrons and protons



positive and negative ions



2/5



5 min



Hint

Q The average velocity gained by electrons in a conductor placed in an electric field is called



variable velocity



uniform velocity



drift velocity



instantaneous velocity





3/5



5 min



Hint

Q The study of conduction of electricity through liquids is known as



electrolysis



resistivity



conductivity



none of above





4/5



5 min



Hint

Q A battery move a charge of 40 C around a circuit at constant rate in 20 sec. The current will be



2 A



0.5 A



80 A



800 A





5/5



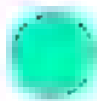
5 min



Hint

Q The drift velocity of an electron in a conductor in the presence of electric field is of the order of

 10^2 ms^{-1}  10^{-3} ms^{-1}  10^{-6} ms^{-1}  10^7 ms^{-1} 



Correct



Unattempted



Incorrect



1/5

Q The charge carriers in metallic conductors are



free electrons



electrons



electrons and protons



positive and negative ions

Explanation

Charge carrier of metallic conductor



Correct



Unattempted



Incorrect



2/5

Q The average velocity gained by electrons in a conductor placed in an electric field is called



variable velocity



uniform velocity



drift velocity



instantaneous velocity

Explanation

Definition



Correct



Unattempted



Incorrect



3/5

Q The study of conduction of electricity through liquids is known as



electrolysis



resistivity



conductivity



none of above



Correct



Unattempted



Incorrect



4/5

Q A battery move a charge of 40 C around a circuit at constant rate in 20 sec. The current will be



2 A



0.5 A



80 A



800 A

Explanation

$$I = \frac{Q}{t}$$



Correct



Unattempted



Incorrect



5/5

Q The drift velocity of an electron in a conductor in the presence of electric field is of the order of

 10^2 ms^{-1}  10^{-3} ms^{-1}  10^{-6} ms^{-1}  10^7 ms^{-1}

Explanation

value of drift velocity

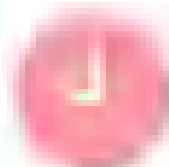


QUIZZES

Practice Test No. 17



5 Questions



5 min

Topics

Current

Start Quiz



1/5



5 min



Hint

Q The thermistors convert changes of temperature into



light energy



electrical energy



heat



sound



2/5



5 min



Hint

Q Thermo-couple convert _____ into electrical energy



heat energy



nuclear energy



mechanical energy



chemical energy





3/5



5 min



Hint

Q In order to have a constant current through a wire, the potential difference across its ends should be:



increasing



decreasing



zero



maintained constant





4/5



5 min



Hint

Q Conversion of chemical energy into electrical energy can be achieved by



solar cell



photo voltaic cell



dry cell



none of these





5/5



5 min



Hint

Q Electric generator is a device which convert mechanical energy into



heat energy



electrical energy



elastic energy



nuclear energy





Correct



Unattempted



Incorrect



1/5

Q The thermistors convert changes of temperature into



light energy



electrical energy



heat



sound

Explanation

$H.E \rightarrow E.E$



Correct



Unattempted



Incorrect



2/5

Q Thermo-couple convert _____ into electrical energy



heat energy



nuclear energy



mechanical energy



chemical energy

Explanation

$H.E \rightarrow E.E$



Correct



Unattempted



Incorrect



3/5

Q In order to have a constant current through a wire, the potential difference across its ends should be:



increasing



decreasing



zero



maintained constant

Explanation

Charge move due to potential difference



Correct



Unattempted



Incorrect



4/5

Q Conversion of chemical energy into electrical energy can be achieved by



solar cell



photo voltaic cell



dry cell



none of these

Explanation

Cell: C.E \rightarrow E.E



Correct



Unattempted



Incorrect



5/5

Q Electric generator is a device which convert mechanical energy into



heat energy



electrical energy



elastic energy



nuclear energy



QUIZZES

Practice Test No. 18



5 Questions



5 min

Topics

Effects of current

Start Quiz



1/5



5 min



Hint

Q When a potential difference of 4 volt is applied across resistance, 10J of energy is converted Find charge flows



0.20 C



2.5 C



5.0 C



10.0 C



2/5



5 min



Hint

Q The production of heat due to an electric current flowing through a conductor is given by



feed back effect



Joule's effect



compton effect



photo electric effect





3/5



5 min



Hint

Q - Magnetic effect of current is used



to detect a current



to measure a current



in electric motor



all of above





4/5



5 min



Hint

Q Thermocouple converts heat energy into



PE



KE



electrical energy



electrical energy





4/5



5 min



Hint

Q Thermocouple converts heat energy into



PE



KE



electrical energy



electrical energy





5/5



5 min



Hint

Q The liquid which conducts electric current is called



cathode



anode



electrolyte



electrode





Correct



Unattempted



Incorrect



1/5

Q When a potential difference of 4 volt is applied across resistance, 10J of energy is converted Find charge flows



0.20 C



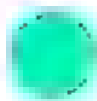
2.5 C



5.0 C



10.0 C



Correct



Unattempted



Incorrect



2/5

Q The production of heat due to an electric current flowing through a conductor is given by



feed back effect



Joule's effect



compton effect



photo electric effect

Explanation

Joule's law



Correct



Unattempted



Incorrect



3/5

Q . Magnetic effect of current is used



to detect a current



to measure a current



in electric motor



all of above

Explanation

uses



Correct



Unattempted



Incorrect



4/5

Q Thermocouple converts heat energy into



PE



KE



electrical energy



electrical energy



Correct



Unattempted



Incorrect



5/5

Q The liquid which conducts electric current is called



cathode



anode



electrolyte



electrode

Explanation

Definition

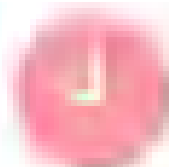


QUIZZES

Practice Test No. 19



5 Questions



5 min

Topics

Start Quiz



1/5



5 min



Hint

Q The graphical representation of Ohm's law is



hyperbola



ellipse



parabola



straight line



2/5



5 min



Hint

Q If three resistors are connected parallel to each other then their equivalent resistance is:



greater than larger individual resistance



less than smaller individual resistance



equal to larger value



equal to smaller value





3/5



5 min



Hint

Q Ohm's law explain the behavior of current under the constant



res stance



voltage



current



both a and b





4/5



5 min



Hint

Q Product of resistance and conductance is



1



0



100



Infinite





5/5



5 min



Hint

Q The smallest resistance obtained by connecting 50 resistance each of $\frac{1}{4}\Omega$ is

 200Ω  $\frac{1}{200}\Omega$  $\frac{50}{4}\Omega$  $\frac{4}{50}\Omega$ 



Correct



Unattempted



Incorrect



1/5

Q The graphical representation of Ohm's law is



hyperbola



ellipse



parabola



straight line

Explanation

I-V graph



Correct



Unattempted



Incorrect



2/5

Q If three resistors are connected parallel to each other then their equivalent resistance is:



greater than larger individual resistance



less than smaller individual resistance



equal to larger value



equal to smaller value



Correct



Unattempted



Incorrect



3/5

Q Ohm's law explain the behavior of current under the constant



res stance.



voltage



current



both a and b

Explanation

$$V \propto I \Rightarrow V = \text{constant. } I = RI = IR$$



Correct



Unattempted



Incorrect



4/5

Q Product of resistance and conductance is



1



0



100



infinite



Correct



Unattempted



Incorrect



5/5

Q The smallest resistance obtained by connecting 50 resistance each of $\frac{1}{4}\Omega$ is



200Ω



$\frac{1}{200}\Omega$



$\frac{50}{4}\Omega$



$\frac{4}{50}\Omega$



QUIZZES

Practice Test No. 20



5 Questions



5 min

Topics

temperature

Start Quiz



1/5



5 min



Hint

Q · The SI unit of resistivity is

 Ohm-m  Ohm-m^2  Ohm-m^3  Ohm



2/5



5 min



Hint

Q The fractional change in resistivity per unit original resistivity per Kelvin in temperature is known as:



temperature coefficient of resistance



temperature coefficient of resistivity



temperature coefficient of conductivity



none of these





3/5



5 min



Hint

Q The conductance of a conductor increases when



its temperature increase



it temperature decrease



its length increases



none these





4/5



5 min



Hint

Q · The SI unit of resistivity are

 Ohm-m^{-1}  Ohm-m^0  Ohm-m  Ohm-m^2 



5/5



5 min



Hint

Q The S.I unit of resistivity is,

 Ωm^{-2}  Ωm^{-1}  Ωm  Ω 



Correct



Unattempted



Incorrect



1/5

Q : The SI unit of resistivity is



Ohm-m



Ohm-m²



Ohm-m³



Ohm

Explanation

$$\rho = \frac{RA}{L} \Rightarrow \frac{\Omega m^2}{m} = \Omega m$$



Correct



Unattempted



Incorrect



2/5

Q The fractional change in resistivity per unit original resistivity per Kelvin in temperature is known as:



temperature coefficient of resistance



temperature coefficient of resistivity



temperature coefficient of conductivity



none of these

Explanation

Definition



Correct



Unattempted



Incorrect

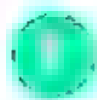


3/5

Q The conductance of a conductor increases when



its temperature increase



it temperature decrease



its length ncreases



none these

Explanation

For conductor, $G \propto \frac{1}{T}$



Correct



Unattempted



Incorrect



4/5

Q The SI unit of resistivity are



Ohm-m⁻¹



Ohm-m⁰



Ohm-m



Ohm-m²



Correct



Unattempted



Incorrect



5/5

Q . The SI unit of resistivity is;



Ωm^{-2}



Ωm^{-1}



Ωm



Ω



QUIZZES

Practice Test No. 21



5 Questions



5 min

Topics

Electronics | Basic Electronics | Analog Electronics | Digital Electronics

Thermistor

Start Quiz



1/5



5 min



Hint

Q To use a rheostat as variable resistor, the terminals which are inserted in a circuit are



Fixed terminal A and sliding contact C



Both fixed terminals A and B



fixed terminal B and sliding contact C



all of above



2/5



5 min



Hint

Q · Thermistors are prepared under



high pressure and high temperature



high pressure and low temperature



low pressure and low temperature



none of these





3/5



5 min



Hint

Q

Potential difference between the portion of wire is given by



$$\frac{V}{R} \times r$$



$$\frac{r}{V} \times R$$



$$\frac{R \times r}{V}$$



$$\frac{VR}{r}$$





4/5



5 min



Hint

Q · If the resistance of 500Ω have fourth band of silver colour then its upper maximum resistance will be

 600Ω  550Ω  450Ω  400Ω 



5/5



5 min



Hint

Q

Shapes of thermistor are



Rod



Bead



Washer/disc



All





Correct



Unattempted



Incorrect



1/5

Q To use a rheostat as variable resistor, the terminals which are inserted in a circuit are



Fixed terminal A and sliding contact C



Both fixed terminals A and B



fixed terminal B and sliding contact C



all of above



Correct



Unattempted



Incorrect



2/5

Q . Thermistors are prepared under:



high pressure and high temperature



high pressure and low temperature



low pressure and low temperature



none of these



Correct



Unattempted



Incorrect



3/5

Q

Potential difference between the portion of wire is given by



$$\frac{V}{R} \times r$$



$$\frac{r}{V} \times R$$



$$\frac{R \times r}{V}$$



$$\frac{VR}{r}$$

Explanation

Formula



Correct



Unattempted



Incorrect



4/5

Q If the resistance of 500Ω have fourth band of silver colour then its upper maximum resistance will be

 600Ω  550Ω  450Ω  400Ω

Explanation

$$R = 500 \pm 50\Omega$$



Correct



Unattempted



Incorrect



5/5

Q.
Shapes of thermistor are



Rod



Bead



Washer/disc



All

Explanation

Shapes

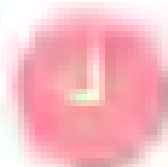


QUIZZES

Practice Test No. 22



5 Questions



5 min

Topics

General Knowledge | Biology | Chemistry | Physics | Mathematics

Subject

Start Quiz



1/5



5 min



Hint

Q The loss of electrical energy per second is called



power dissipation



energy dissipation



work



none of these



2/5



5 min



Hint

Q The electrical power in mathematical form can be expressed as:



$$P = I^2 R$$



$$P = V \times I$$



$$P = \frac{V^2}{R}$$



all of above





3/5



5 min



Hint

Q which is not the equation for the power dissipation in a resistor is.



$$P = I^2 R$$



$$P = \frac{V^2}{R}$$



$$P = IR$$



all of above





4/5



5 min



Hint

Q Which equation is used to define resistance?



Energy = (current)² × resistance × time



potential difference = current × resistance



power = (current)² × resistance



resistivity = resistance × area + length





5/5



5 min



Hint

Q

Electrical power is expressed as



$$V \frac{\Delta Q}{\Delta t}$$



$$\frac{I}{W}$$



$$\frac{V}{I}$$



$$\frac{\Delta Q}{V \Delta t}$$





Correct



Unattempted



Incorrect



1/5

Q The loss of electrical energy per second is called



power dissipation



energy dissipation



work



none of these

Explanation

Definition



Correct



Unattempted



Incorrect



2/5

Q The electrical power in mathematical form can be expressed as



$$P = I^2 R$$



$$P = V \times I$$



$$P = \frac{V^2}{R}$$



all of above

Explanation

Formula



Correct



Unattempted



Incorrect



3/5

Q The loss of electrical energy per second is called



$$P = I^2 R$$



$$P = \frac{V^2}{R}$$



$$P = IR$$



all of above



Correct



Unattempted



Incorrect



4/5

Q Which equation is Used to define resistance?



Energy = (current)² × resistance × time



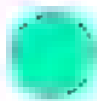
potential difference = current × resistance



power = (current)² × resistance



resistivity = resistance × area + length



Correct



Unattempted



Incorrect



5/5

Q.
Electrical power is expressed as



$$V \frac{\Delta Q}{\Delta t}$$



$$\frac{I}{W}$$



$$\frac{V}{I}$$



$$\frac{\Delta Q}{V \Delta t}$$

Explanation

$$P = VI = V \frac{\Delta Q}{\Delta t}$$

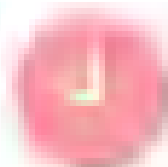


QUIZZES

Practice Test No. 23



5 Questions



5 min

Topics

Physics: Mechanics & Waves & Optics

Maximum power output

Start Quiz



1/5



5 min



Hint

Q Max mum Power delivered by battery is



$$P_{max} = \frac{E^2}{4r}$$



$$P_{max} = 4rE^2$$



$$P_{max} = VI$$



unlimited



2/5



5 min



Hint

Q Which device is used to determine internal resistance of a cell



potentiometer



wheat stone bridge



voltmeter



ammeter





3/5



5 min



Hint

Q The terminal potential difference V of a cell is

 $\mathcal{E} - Ir$  $\mathcal{E} + Ir$  $\mathcal{E} - r$  $\mathcal{E} + r$ 



4/5



5 min



Hint

Q The emf is always present when _____ current is drawn from the battery



only maximum



only minimum



only zero



zero or no





5/5



5 min



Hint

Q The energy supplied to unit charge by the cell is given by



$$E = \frac{\Delta W}{\Delta Q}$$



$$E = \frac{\Delta Q}{\Delta W}$$



$$E = \Delta Q \times \Delta W$$



none of these





Correct



Unattempted



Incorrect



1/5

Q Max mum Power delivered by battery is



$$P_{max} = \frac{E^2}{4r}$$



$$P_{max} = 4rE^2$$



$$P_{max} = V/r$$



unlimited

Explanation

Formula



Correct



Unattempted



Incorrect



2/5

Q Which device is used to determine internal resistance of a cell



potentiometer



wheat stone bridge



voltmeter



ammeter



Correct



Unattempted



Incorrect



3/5

Q The terminal potential difference V of a cell is



$E - Ir$



$E + Ir$



$E + r$



$E + r$



Correct



Unattempted



Incorrect



4/5

Q The emf is always present when _____ current is drawn from the battery



on y maximum



on y minimum



on y zero



zero or no

Explanation

Basic concept of emf



Correct



Unattempted



Incorrect



5/5

Q The energy supplied to unit charge by the cell is given by



$$E = \frac{\Delta W}{\Delta Q}$$



$$E = \frac{\Delta Q}{\Delta W}$$



$$E = \Delta Q \times \Delta W$$



none of these

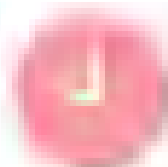


QUIZZES

Practice Test No. 24



5 Questions



5 min

Topics

second rule

Start Quiz



1/5



5 min



Hint

Q

According to Kirchhoff's 2nd rule, if a source of emf is traversed from negative to positive then the potential change is



positive



negative



zero



none of these



2/5



5 min



Hint

Q dd



maximum current flows through the galvanometer



minimum current flows through the galvanometer



potential difference across galvanometer is maximum



potential difference across galvanometer is zero





3/5



5 min



Hint

Q If



2 resistances



3 resistances



4 resistances



c





4/5



5 min



Hint

Q ggg



Wheat stone bridge



galvanometer



potentiometer



voltmeter





5/5



5 min



Hint

Q Kirchhoff's voltage rule is a way of stating conservation of



energy



momentum



charge



angular momentum





Correct



Unattempted



Incorrect



1/5

Q.

According to Kirchhoff's 2nd rule, if a source of emf is traversed from negative to positive then the potential change is



positive



negative



zero



none of these

Explanation

Rule



Correct



Unattempted



Incorrect



2/5

Q: dd



maximum current flows through the galvanometer



minimum current flows through the galvanometer



potential difference across galvanometer is maximum



potential difference across galvanometer is zero



Correct



Unattempted



Incorrect



3/5

Q: rf



2 resistances



3 resistances



4 resistances



c



Correct



Unattempted



Incorrect



4/5

Q : ggg



Wheat stone bridge



galvanometer



potentiometer



voltmeter



Correct



Unattempted



Incorrect



5/5

Q Kirchhoff's voltage rule is a way of stating conservation of



energy



momentum



charge



angular momentum



QUIZZES

Practice Test No. 25



5 Questions



5 min

Topics

Wheatstone bridge

Start Quiz



1/5



5 min



Hint

Q A balanced wheatstone bridge is used to measure the



the current



pot difference



an unknown resistance



none of above



2/5



5 min



Hint

Q The condition for the wheatstone bridge to be balanced is given by



$$\frac{R_1}{R_2} = \frac{R_3}{R_4}$$



$$\frac{R_2}{R_1} = \frac{R_3}{R_4}$$



$$\frac{R_1}{R_2} = \frac{R_4}{R_3}$$



none of above





3/5



5 min



Hint

Q Which one of the following instrument can measure the unknown resistance with sufficient accuracy



potentiometer



slide wire bridge



galvanometer



all of above





4/5



5 min



Hint

Q Wheatstone bridge cannot measure



current



res stance galvanometer



emf



all of these





5/5



5 min



Hint

Q current flowing through galvanometer will be zero if



$$I_1 = I_2$$



$$I_1 - I_2 = 0$$



both A and B



none of these





QUIZZES

Practice Test 27



5 Questions



5 min

Topics

uniform magnetic field

Start Quiz



1/5



5 min



Hint

Q If fingers of right hand show the direction of magnetic field and palm shows the direction of force then thumb points for



torque



voltage



current



induced emf



2/5



5 min



Hint

Q The name of the scientist who noted that a compass needle was deflected when placed near the current carrying conductor



Henry



Faraday



Coulomb



Oersted





3/5



5 min



Hint

Q When some compass needles are placed on a cardboard along a circle with the center at the wire, they will



Set themselves tangential to the circle



Points in the direction of N-S



Points in the direction of E-W



None of these





4/5



5 min



Hint

Q Representation of a current flowing towards a reader is denoted by



dot



dash



cross



tick





5/5



5 min



Hint

Q A current carrying conductor experiences maximum magnetic force in a uniform magnetic field when it is placed



perpendicular to field



parallel to field

at an angle of 60° to the fieldat an angle of 180° to the field



Correct



Unattempted



Incorrect



1/5

Q If fingers of right hand show the direction of magnetic field and palm shows the direction of force then thumb points for



torque



voltage



current



induced emf

Explanation

Using R H R thumb points for direction of current



Correct



Unattempted



Incorrect



2/5

Q The name of the scientist who noted that a compass needle was deflected when placed near the current carrying conductor



Henry



Faraday



Coloumb



Oersted

Explanation

Information



Correct



Unattempted



Incorrect



3/5

Q When some compass needles are placed on a cardboard along a circle with the center at the wire, they will



Set themselves tangential to the circle



Points in the direction of N-S



Points in the direction of E-W



None of these

Explanation

Function of compass needles



Correct



Unattempted



Incorrect



4/5

Q Representation of a current flowing towards a reader is denoted by



dot



dash



cross



tick



Correct



Unattempted



Incorrect



5/5

Q A current carrying conductor experiences maximum magnetic force in a uniform magnetic field when it is placed



perpendicular to field



parallel to field



at an angle of 60° to the field



at an angle of 180° to the field



QUIZZES

Practice Test 28



5 Questions



5 min

Topics

Magnetic flux and flux density

Start Quiz



1/5



5 min



Hint

Q : Unit of magnetic flux is



weber



gauss



tes a

ampere/m²



2/5



5 min



Hint

Q . The dimensions of magnetic flux are



$$M^1 L^2 T^1 A^1$$



$$MLT^{-2}A^1$$



$$ML^2 T^2 A^1$$



$$ML^2 T^{-2} A^{-1}$$





3/5



5 min



Hint

Q : When the angle between the vector area and the magnetic field is 0° then magnetic flux is



Half



Minimum



Maximum



Double





4/5



5 min



Hint

Q The magnetic flux will be maximum when the angle between \vec{B} and \vec{A} is

 270°  60°  90°  0° 



5/5



5 min



Hint

Q . One weber is equal to

 NA^{-1}  $\text{Nm}^{-1} \text{A}$  NmA^{-1}  $\text{Nm}^{-1} \text{A}^{-1}$ 



Correct



Unattempted



Incorrect



1/5

Q · Unit of magnetic flux is



weber



gauss



tesla



ampere/m²

Explanation

$$\phi = \vec{B} \cdot \vec{A} \Rightarrow \text{weber} = \text{Tesla} \cdot (\text{metre})^2$$



Correct



Unattempted



Incorrect



2/5

Q · The dimensions of magnetic flux are



$$M^1 L^2 T^1 A^1$$



$$M L T^2 A^1$$



$$M L^2 T^2 A^1$$



$$M L^2 T^{-2} A^{-1}$$

Explanation

$$\phi = BA = \frac{F}{IL} \cdot A \Rightarrow kgm^2s^{-2}A^{-1} \Rightarrow [ML^2T^{-2}A^{-1}]$$



Correct



Unattempted



Incorrect



3/5

Q When the angle between the vector area and the magnetic field is 0° then magnetic flux is:



Half



Minimum



Maximum



Double

Explanation

$$\phi = BA \cos 0^\circ = (BA)_{\max}$$



Correct



Unattempted



Incorrect



4/5

Q The magnetic flux will be maximum when the angle between \vec{B} and \vec{A} is



270°



60°



90°



0°



Correct



Unattempted



Incorrect



5/5

Q · One weber is equal to



NA^{-1}



$\text{Nm}^{-1} \text{A}$



NmA^{-1}



$\text{Nm}^{-1} \text{A}^{-1}$

Explanation

$$\phi = \vec{B} \cdot \vec{A}$$

$$\text{Weber} = (\text{NA}^{-1} \text{m}^{-1})(\text{m}^2) = \text{NmA}^{-1}$$



QUIZZES

Practice Test 29



5 Questions



5 min

Topics

Ampere's law and determination of Flux

SL

current carrying solenoid

Start Quiz



1/5



5 min



Hint

Q . Amperian path is



Circular path



Closed path



Rectangular path



Any of above



2/5



5 min



Hint

Q: μ_0 is called



Permeability of free space



Proportional constant



Permittivity of free space



None of these





3/5



5 min



Hint

Q The magnetic field inside the solenoid can be increased by



Increasing number of turns



Decreasing current



increasing current



Both (a) and (c)





4/5



5 min



Hint

Q The strength of magnetic field produced inside the solenoid when it has n turns per unit length and current I is



$$B = \mu_0 N^2 I^2$$



$$B = \mu_0 NI$$



$$B = \mu_0 nI$$



$$B = \mu_0 \frac{N}{l}$$





5/5



5 min



Hint

Q The magnetic field inside a long solenoid, when current "I" passed through it will be



weak



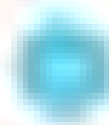
strong



zero



first strong then weak





Correct



Unattempted



Incorrect



1/5

Q Amperian path is



Circular path



Closed path



Rectangular path



Any of above

Explanation

It is closed imaginary path



Correct



Unattempted



Incorrect



2/5

μ_0 is called



Permeability of free space



Proportional constant



Permittivity of free space



None of these

Explanation

$$B = \frac{\mu_0 I}{2\pi r} \text{ where } \mu_0 = 4\pi \times 10^{-7} \text{ web } A^{-1}m^{-1}$$



Correct



Unattempted



Incorrect



3/5

Q The magnetic field inside the solenoid can be increased by



increasing number of turns



Decreasing current



Increasing current



Both (a) and (c)

Explanation

$$B = \mu_0 \frac{N}{L} I \Rightarrow B \propto I, B \propto N$$



Correct



Unattempted



Incorrect



4/5

Q The strength of magnetic field produced inside the solenoid when it has n turns per unit length and current I is



$$B = \mu_0 N^2 I^2$$



$$B = \mu_0 NI$$



$$B = \mu_0 nI$$



$$B = \mu_0 \frac{N}{l} I$$

Explanation

Formula: $B = \mu_0 nI$



Correct



Unattempted



Incorrect



5/5

Q The magnetic field inside a long solenoid, when current " I " passed through it will be



weak



strong



zero



first strong then weak

Explanation

Parallel and equally spaced



QUIZZES

Practice Test 30



5 Questions



5 min

Topics

a moving charge in a magnetic field

Start Quiz



1/5



5 min



Hint

Q The magnetic force experienced by a charge particle moving in a magnetic field will be maximum when it moves:



parallel to magnetic field



Anti-parallel to magnetic field



Perpendicular to magnetic field



None of these



2/5



5 min



Hint

Q Which one is suitable for circular trajectory of a charged particle



Magnetic field



Electric field



Conservative field



Gravitational field





3/5



5 min



Hint

Q The force $F = F_e + F_m$ in the equation is called



deflecting force



restoring force



Lorentz force



none of these





4/5



5 min



Hint

Q . The electric force can



change the speed of particle



cannot change the speed



has not effect



all of these





5/5



5 min



Hint

Q An electron of mass 'm' and charge 'e' is moving in a circle of radius 'r' with speed 'v' in a uniform magnetic field of strength B then



$$r \propto m$$



$$r \propto B$$



$$r \propto \frac{1}{v}$$



$$r \propto \frac{1}{m}$$





Correct



Unattempted



Incorrect



1/5

Q The magnetic force experienced by a charge particle moving in a magnetic field will be maximum when it moves.



parallel to magnetic field



Anti-parallel to magnetic field



Perpendicular to magnetic field



None of these

Explanation

$$F = qvB \sin 90^\circ = qvB$$



Correct



Unattempted



Incorrect



2/5

Q Which one is suitable for circular trajectory of a charged particle



Magnetic field



Electric field



Conservative field



Gravitational field



Correct



Unattempted



Incorrect



3/5

Q The force $F = F_e + F_m$ in the equation is called



deflecting force



restoring force



Lorentz force



none of these



Correct



Unattempted



Incorrect



4/5

Q · The electric force can



change the speed of particle



cannot change the speed



has not effect



all of these



Correct



Unattempted



Incorrect



5/5

Q An electron of mass 'm' and charge 'e' is moving in a circle of radius 'r' with speed 'v' in a uniform magnetic field of strength B then



$$r \propto m$$



$$r \propto B$$



$$r \propto \frac{1}{v}$$



$$r \propto \frac{1}{m}$$



QUIZZES

Practice Test 31



5 Questions



5 min

Topics

magnetic field

Start Quiz



1/5



5 min



Hint

Q When a charged particle is projected perpendicularly in a magnetic field, its trajectory is



hyper bola



para bola



helix



circular



2/5



5 min



Hint

Q . The electric force can



change speed of particle



deflect the particle



Both A and B



has not effect





3/5



5 min



Hint

Q : Lorentz force is given by



$$q(\vec{E} - \vec{v} \times \vec{B})$$



$$q(\vec{E} + \vec{v} \times \vec{B})$$



$$q(\vec{E} \times (\vec{v} + \vec{B}))$$



$$q(\vec{v} + \vec{v} + \vec{B})$$





4/5



5 min



Hint

Q The sum of electric and magnetic force is called



Maxwell force



Lorentz force



Newton's force



centripetal force





5/5



5 min



Hint

Q The Lorentz force on a charged particle moving in electric field E and magnetic field B is given by



$$F = F_E + F_B$$



$$F = F_E - F_B$$



$$F = \frac{F_B}{F_E}$$



$$F = F_E \times F_B$$





Correct



Unattempted



Incorrect



1/5

Q When a charged particle is projected perpendicularly in a magnetic field, its trajectory is



hyperbolic



parabolic



helix



circular



Correct



Unattempted



Incorrect



2/5

Q · The electric force can



change speed of particle



deflect the particle



Both A and B



has not effect

Explanation

Electric force is accelerating force.



Correct



Unattempted



Incorrect



2/5

Q · The electric force can



change speed of particle



deflect the particle



Both A and B



has not effect

Explanation

Electric force is accelerating force.



Correct



Unattempted



Incorrect



3/5

Q · Lorentz force is given by



$$q(\vec{E} - \vec{v} \times \vec{B})$$



$$q(\vec{E} + \vec{v} \times \vec{B})$$



$$q(\vec{E} \times (\vec{v} + \vec{B}))$$



$$q(\vec{v} + \vec{v} + \vec{B})$$

Explanation

Lorentz equation



Correct



Unattempted



Incorrect



4/5

Q The sum of electric and magnetic force is called



Maxwell force



Lorentz force



Newton's force



centripetal force

Explanation

Lorentz equation

$$\vec{F} = \vec{F}_e + \vec{F}_m$$



Correct



Unattempted



Incorrect



5/5

Q The Lorentz force on a charged particle moving in electric field E and magnetic field B is given by



$$F = F_E + F_B$$



$$F = F_E - F_B$$



$$F = \frac{F_B}{F_E}$$



$$F = F_E \times F_B$$

Explanation

Lorentz equation



QUIZZES

Practice Test 32



5 Questions



5 min

Topics

Start Quiz



1/5



5 min



Hint

Q . The e/m of a neutron is



less than electron



greater than electron



zero



the same as electron



2/5



5 min



Hint

Q . Work done by magnetic force



zero

 Fd 

maximum

 $Fd\sin\theta$ 



3/5



5 min



Hint

Q . The relation for e/m of an electron is



$$\frac{2V^2}{Br}$$



$$\frac{2V}{B^2r}$$



$$\frac{2V}{Br^2}$$



$$\frac{2V}{B^2r^2}$$





4/5



5 min



Hint

Q . The e/m of a neutron is



less than electron



greater than electron



zero



the same as electron





5/5



5 min



Hint

Q : The value of e/m is smallest for:



proton



electron

 β -particle

none





Correct



Unattempted



Incorrect



1/5

Q · The e/m of a neutron is



less than electron



greater than electron



zero



the same as electron

Explanation

$$\frac{e}{m} = \frac{0}{m} = 0 \text{ [For neutron charge is zero]}$$



Correct



Unattempted



Incorrect



2/5

Q · Work done by magnetic force



zero



Fd



maximum



$Fd \sin \theta$

Explanation

$$W = Fd \cos 90^\circ = 0$$



Correct



Unattempted



Incorrect



3/5

Q The relation for e/m of an electron is



$$\frac{2V^2}{Br}$$



$$\frac{2V}{B^2r}$$



$$\frac{2V}{Br^2}$$



$$\frac{2V}{B^2r^2}$$

Explanation

$$\frac{e}{m} = \frac{2v}{B^2r^2}$$



Correct



Unattempted



Incorrect



4/5

Q · The e/m of a neutron is



less than electron



greater than electron



zero



the same as electron



Correct



Unattempted



Incorrect



5/5

Q : The value of $\frac{e}{m}$ is smallest for



proton



electron



β -particle



none

Explanation

$$\left(\frac{e}{m}\right) \propto \frac{1}{m}$$

$$m_p > m_e$$

$$\left(\frac{e}{m}\right) < \left(\frac{e}{m}\right)$$



Correct



Unattempted



Incorrect



5/5

Q · The value of e/m is smallest for



proton



electron



β -particle



none

Explanation

$$\left(\frac{e}{m}\right) \propto \frac{1}{m}$$

$$m_p > m_e$$

$$\left(\frac{e}{m}\right)_p < \left(\frac{e}{m}\right)_e$$



QUIZZES

Practice Test 33



5 Questions



5 min

Topics

Cathode Ray Oscilloscope

[Start Quiz](#)



1/5



5 min



Hint

Q In CRO the waveform created by sweep or time base generator is



cosine wave



sinusoidal wave



saw tooth wave



none of these



2/5



5 min



Hint

Q . The anode in the CRO is



controls number of waves



controls brightness of spot formed



accelerates and focuses the beam



at negative potential with respect to cathode





3/5



5 min



Hint

Q The brightness of the spot on CRO screen is controlled by



anode



cathode



grid



screen





4/5



5 min



Hint

Q In CRO, the output wave form of time base generator is.



circular



square



sinusoidal



saw-tooth





5/5



5 min



Hint

Q Cathode ray oscilloscope works by deflecting a beam of



protons



positrons



electrons



neutrons





Correct



Unattempted



Incorrect



1/5

Q In CRO the waveform created by sweep or time base generator is



cosine wave



sinusoidal wave



saw tooth wave



none of these

Explanation

Saw tooth wave.



Correct



Unattempted



Incorrect



2/5

Q · The anode in the CRO is



controls number of waves



controls brightness of spot formed



accelerates and focuses the beam



at negative potential with respect to cathode



Correct



Unattempted



Incorrect



3/5

Q The brightness of the spot on CRO screen is controlled by



anode



cathode



grid



screen

Explanation

Brightness \propto no of electron
no of electron controlled by grid.



Correct



Unattempted



Incorrect



4/5

Q In CRO, the output wave form of time base generator is



circular



square



sinusoidal



saw-tooth



Correct



Unattempted



Incorrect



5/5

Q Cathode ray oscilloscope works by deflecting a beam of



protons



positrons



electrons



neutrons



QUIZZES

Practice Test 34



5 Questions



5 min

Topics

Torque on a current carrying coil

Start Quiz



1/5



5 min



Hint

Q . The torque on current carrying coil is



$$\tau = NIAB \cos \alpha$$



$$\tau = BIL \sin \alpha$$



$$\tau = NIAB \sin \alpha$$



$$\tau = BIL \cos \alpha$$



2/5



5 min



Hint

Q The relation for maximum value of deflecting torque is given by



$$\tau = \frac{B}{NIA}$$



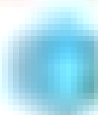
$$\tau = NIAB$$



$$\tau = BNA$$



$$\tau = BNA \sin \theta$$





3/5



5 min



Hint

Q The expression for torque acting on a current carrying coil placed in a uniform magnetic field is equal to



$$\tau = BIA \cos \alpha$$



$$\tau = BA \cos \alpha$$



$$\tau = BIA \sin \alpha$$



$$\tau = \mu B \cos \alpha$$





4/5



5 min



Hint

Q Mathematically, torque on a current carrying loop whose plane makes an angle of α with \vec{B} is given by

 $ILB \cot \alpha$  $ILB \sin \alpha$  $ILB \tan \alpha$  $ILB \cos \alpha$ 



5/5



5 min



Hint

Q Torque is produced in a current carrying coil when it is placed in a



magnetic field



electric field



gravitational field



nuclear field





Correct



Unattempted



Incorrect



1/5

Q · The torque on current carrying coil is



$$\tau = NIAB \cos \alpha$$



$$\tau = BIL \sin \alpha$$



$$\tau = NIAB \sin \alpha$$



$$\tau = BIL \cos \alpha$$



Correct



Unattempted



Incorrect



2/5

Q The relation for maximum value of deflecting torque is given by



$$\tau = \frac{B}{NIA}$$



$$\tau = NIAB$$



$$\tau = BNA$$



$$\tau = BNA \sin \theta$$

Explanation

$$\tau = NIBA \cos \theta^{\circ} = NIBA$$



Correct



Unattempted



Incorrect



3/5

Q The expression for torque acting on a current carrying coil placed in a uniform magnetic field is equal to



$$\tau = BIA \cos \alpha$$



$$\tau = BA \cos \alpha$$



$$\tau = BIA \sin \alpha$$



$$\tau = IB \cos \alpha$$

Explanation

Formula



Correct



Unattempted



Incorrect



4/5

Q Mathematically, torque on a current carrying loop whose plane makes an angle of α with \vec{B} is given by



$iLB \cot \alpha$



$LB \sin \alpha$



$iLB \tan \alpha$



$ILB \cos \alpha$



Correct



Unattempted



Incorrect



5/5

Q Torque is produced in a current carrying coil when it is placed in a



magnetic field



electric field



gravitational field



nuclear field

Explanation

Coil experience torque in magnetic field ($\tau = NIBA \cos \alpha$)

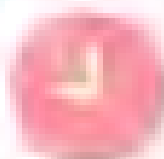


QUIZZES

Practice Test 35



5 Questions



5 min

Topics

Galvanometer

Start Quiz



1/5



5 min



Hint

Q In case of galvanometer, the magnitude of the deflecting torque is given as

 $BIN \cos \alpha$  $BIN \cos \alpha$  $NIA \cos \alpha$ 

None of above



2/5



5 min



Hint

Q The working of all D C electric meters (ammeters galvanometer and voltmeter) based upon



magnetic force exerted on the moving charge



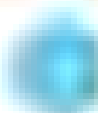
chemical effect of current



magnetic effect of current



none of these





3/5



5 min



Hint

Q The sensitivity of a galvanometer can be increased by



decreasing the area of the coil



increasing the magnetic field



decreasing the number of turns



all of these





4/5



5 min



Hint

Q The relation between current I and angle of deflection θ in a moving coil galvanometer is



$$I \propto \theta$$



$$I \propto \frac{1}{\theta}$$



$$I \propto \sin \theta$$



$$I \propto \cos \theta$$





5/5



5 min



Hint

Q The couple c for unit twist of the suspension wire can be decreased by



increasing its length



decreasing its length



increasing its diameter



its cannot be decreased





Correct



Unattempted



Incorrect



1/5

Q In case of galvanometer, the magnitude of the deflecting torque is given as



$BIN \cos \alpha$



$BIN \cos \alpha$



$NIA \cos \alpha$



None of above

Explanation

$$\tau_a = NIBA \cos \alpha$$



Correct



Unattempted



Incorrect



2/5

Q The working of all D C electric meters (ammeters, galvanometer and voltmeter) based upon



magnetic force exerted on the moving charge



chemical effect of current



magnetic effect of current



none of these



Correct



Unattempted



Incorrect



3/5

Q The sensitivity of a galvanometer can be increased by



decreasing the area of the coil



increasing the magnetic field



decreasing the number of turns



all of these

Explanation

$$\text{Sensitivity} = \frac{\theta}{I} = \frac{NAB}{C} \quad \left| \quad \text{Sensitivity} \propto B \quad \right|$$



Correct



Unattempted



Incorrect



4/5

Q The relation between current I and angle of deflection θ , in a moving coil galvanometer is:



$$I \propto \theta$$



$$I \propto \frac{1}{\theta}$$



$$I \propto \sin \theta$$



$$I \propto \cos \theta$$

Explanation

$$\uparrow I \propto \theta \uparrow$$



Correct



Unattempted



Incorrect



5/5

Q The couple c for unit twist of the suspension wire can be decreased by



increasing its length



decreasing its length



increasing its diameter



its cannot be decreased

Explanation

$$c \propto \frac{1}{l}$$

↓ ↑



QUIZZES

Practice Test 36



5 Questions



5 min

Topics

Conversion of Galvanometer: A V O

Start Quiz



1/5



5 min



Hint

Q When a small resistance is connected parallel to the galvanometer, the resulting is



voltmeter



Wheatstone bridge



ammeter



potentiometer



2/5



5 min



Hint

Q . The shunt resistance is given by



$$R_s = \frac{I_g R_g}{1 + I_g}$$



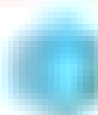
$$R_s = \frac{I_g R_g}{1 - I_g}$$



$$R_s = \frac{I_g R_g}{I_g - 1}$$



$$R_s = \frac{I_g R_g}{I_g + 1}$$





3/5



5 min



Hint

Q . AVO-meter is used to measure the



res stance



current



voltage



all of these





4/5



5 min



Hint

Q The low current required to produce 1mm deflection on a scale placed 1m away from mirror of galvanometer is called



sensitivity of voltmeter



sensitivity of ohm meter



sensitivity of ammeter



current sensitivity of galvanometer





5/5



5 min



Hint

Q Useful device to measure resistance, current and voltage is an electronic instrument called



voltmeter



ammeter



ohmmeter



digital multimeter





Correct



Unattempted



Incorrect



1/5

Q When a small resistance is connected parallel to the galvanometer, the resulting is



voltmeter



Wheatstone bridge



ammeter



potentiometer

Explanation

Conversion of galvanometer to Ammeter



Correct



Unattempted



Incorrect



2/5

Q · The shunt resistance is given by



$$R_s = \frac{I_g R_g}{1 + I_g}$$



$$R_s = \frac{I_g R_g}{1 - I_g}$$



$$R_s = \frac{I_g R_g}{I_g - 1}$$



$$R_s = \frac{I_g R_g}{I_g + 1}$$

Explanation

Formula



Correct



Unattempted



Incorrect



3/5

Q - AVO-meter is used to measure the



res stance



current



voltage



all of these

Explanation

A for Ammeter, v For voltmeter and Ω For ohm-meter



Correct



Unattempted



Incorrect



4/5

Q The low current required to produce 1mm deflection on a scale placed 1m away from mirror of galvanometer is called



sensitivity of voltmeter



sensitivity of ohm meter



sensitivity of ammeter



current sensitivity of galvanometer

Explanation

$$\text{Sensitivity} = \frac{\theta}{I}$$



Correct



Unattempted



Incorrect



5/5

Q Useful device to measure resistance, current and voltage is an electronic instrument called



voltmeter



ammeter



ohmmeter



digital multimeter

Explanation

Functions of DMM



QUIZZES

Practice Test 37



5 Questions



5 min

Topics

Induced EMF and Induced Current

Start Quiz



1/5



5 min



Hint

Q The induced emf in a circuit depends upon



maximum magnetic flux



change in magnetic flux



initial magnetic flux



rate of change of magnetic flux



2/5



5 min



Hint

Q A coil of constant area is placed in a constant magnetic field, an induced current produced in the coil when



the coil is rotated



the coil is stationary



both A and B



none of these





3/5



5 min



Hint

Q . Which of the following is scalar



Flux density



emf



magnetic flux



both B and C





4/5



5 min



Hint

Q A magnetic compass will be deflected if it is kept near a



charge at rest



charge in motion



positive charge at rest



none of them





5/5



5 min



Hint

Q The common doorbell required a voltage of about



9 Vorts



8 volts



7 Volts



6 Volts





Correct



Unattempted



Incorrect



1/5

Q The induced emf in a circuit depends upon



maximum magnetic flux



change in magnetic flux



initial magnetic flux



rate of change of magnetic flux

Explanation

$$\varepsilon = N \frac{\Delta \phi}{\Delta t} \Rightarrow \varepsilon \propto \frac{\Delta \phi}{\Delta t}$$



Correct



Unattempted



Incorrect



2/5

Q A coil of constant area is placed in a constant magnetic field, an induced current produced in the coil when



the coil is rotated



the coil is stationary



both A and B



none of these



Correct



Unattempted



Incorrect



3/5

Q · Which of the following is scalar



Flux density



emf



magnetic flux



both B and C



Correct



Unattempted



Incorrect



4/5

Q A magnetic compass will be deflected if it is kept near a



charge at rest



charge in motion



positive charge at rest



none of them



Correct



Unattempted



Incorrect



5/5

Q The common doorbell required a voltage of about



9 Volts



8 volts



7 Volts



6 Volts

Explanation

Information



QUIZZES

Practice Test 38



5 Questions



5 min

Topics

Motional EMF

[Start Quiz](#)



1/5



5 min



Hint

Q When a conductor moves across a magnetic field, an emf is set up
This emf is called



variable emf



constant emf



induced emf



back emf



2/5



5 min



Hint

Q

The emf produced by the motion of a coil across the magnetic field is called



motional emf



emf



induced emf



none of the above





3/5



5 min



Hint

Q A straight line conductor of length 0.4 m is moved with speed of 7 m/s perpendicular to the magnetic field 0.9 Wb/m^2 . The induced emf across the conductor is.



1.26 volt



25.2 volt



2.52 volt



5.04 volt





4/5



5 min



Hint

Q A flat circular coil of 120 turns, each of area 0.070m^2 , is placed with its axis parallel to a uniform magnetic field. The flux density of the field is changed steadily from 80 mT to 20 mT over a period of 4.0s. What is the emf induced in the coil during this time?



0



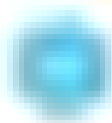
130 mV



170 mV



500 mV





5/5



5 min



Hint

Q The law of electromagnetic induction is related to



Lenz



Faraday



Coulomb



Ampere





Correct



Unattempted



Incorrect



1/5

Q When a conductor moves across a magnetic field, an emf is set up
This emf is called



variable emf



constant emf



induced emf



back emf



Correct



Unattempted



Incorrect



2/5

Q

The emf produced by the motion of a coil across the magnetic field is called



motional emf



emf



induced emf



none of the above

Explanation

Definition.



Correct



Unattempted



Incorrect



3/5

Q A straight line conductor of length 0.4 m is moved with speed of 7m/s perpendicular to the magnetic field 0.9 Wb/m². The induced emf across the conductor is.



1.26 volt



25.2 volt



2.52 volt



5.04 volt

Explanation

$$\varepsilon = vBL \sin\theta = (7)(0.9)(0.4) \sin 90^\circ$$



Correct



Unattempted



Incorrect



4/5

Q A flat circular coil of 120 turns, each of area 0.070m^2 , is placed with its axis parallel to a uniform magnetic field. The flux density of the field is changed steadily from 80 mT to 20 mT over a period of 4.0s. What is the emf induced in the coil during this time?



0



130 mV



170 mV



500 mV



Correct



Unattempted



Incorrect



5/5

Q The law of electromagnetic induction is related to



Lenz



Faraday



Coulomb



Ampere

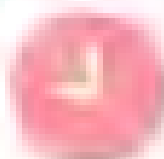


QUIZZES

Practice Test 39



5 Questions



5 min

Topics

Faraday's Law and induced EMF

Start Quiz



1/5



5 min



Hint

Q . emf is induced due to change in



charge



current



magnetic flux



electric field



2/5



5 min



Hint

Q The rate of change of magnetic flux is directly proportional to the induced emf is called



Lenz law



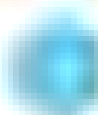
Faraday's



Oersted law



None of them





3/5



5 min



Hint

Q . Farady's law was deduced in:



1830



1841



1831



1931





4/5



5 min



Hint

Q The emf induced in the secondary coil is directly proportional to



rate of change of magnetic flux



rate of change of electric flux



change of magnetic flux



all of above





5/5



5 min



Hint

Q The negative sign in the equation $\varepsilon = M \frac{\Delta I}{\Delta t}$ shows that the induced emf is in such a direction that it



Favours the current in the primary coil.



opposes the current in the primary coil



opposes the change of current in the primary coil



none of these





Correct



Unattempted



Incorrect



1/5

Q - emf is induced due to change in



charge



current



magnetic flux



electric field



Correct



Unattempted



Incorrect



2/5

Q The rate of change of magnetic flux is directly proportional to the induced emf is called



Lenz law



Faraday's



Oersted law



None of them

Explanation

$$\varepsilon = N \frac{\Delta \phi}{\Delta t} \Rightarrow \varepsilon \propto \frac{\Delta \phi}{\Delta t}$$



Correct



Unattempted



Incorrect



3/5

Q · Farady's law was deduced in:



1830



1841



1831



1931

Explanation

Information



Correct



Unattempted



Incorrect



4/5

Q The emf induced in the secondary coil is directly proportional to



rate of change of magnetic flux



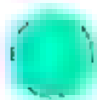
rate of change of electric flux



change of magnetic flux



all of above



Correct



Unattempted



Incorrect



5/5

Q The negative sign in the equation $\varepsilon = M \frac{\Delta I}{\Delta t}$ shows that the induced emf is in such a direction that it.



Favours the current in the primary coil



opposes the current in the primary coil



opposes the change of current in the primary coil



none of these

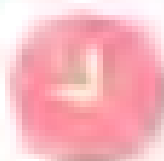


QUIZZES

Practice Test 40



5 Questions



5 min

Topics

enz s law

[Start Quiz](#)



1/5



5 min



Hint

Q

The direction of induced current is always so as to oppose the change which causes the current is



Faraday's law



Lenz's law



Ohm's law

Kirchoff's 1st rule

2

3

4

5



2/5



5 min



Hint

Q : Lenz's law presented in



1834



1934



1826



1836





3/5



5 min



Hint

Q Lenz's law provides a relation between



current and magnetic field



force on a current carrying conductor and magnetic field



induced emf and the rate of change of magnetic flux



none of these





4/5



5 min



Hint

Q Lenz's law does not violated the principle of



conservation of mass



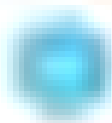
conservation of energy



conservation of charge



conservation of momentum





5/5



5 min



Hint

Q The direction of the induced emf during electromagnetic induction is determined by



Lenz's law



Faraday's law



Ampere's law



none of these





Correct



Unattempted



Incorrect



1/5

Q

The direction of induced current is always so as to oppose the change which causes the current is



Faraday's law



Lenz's law



Ohm's law



Kirchoff's 1st rule

Explanation

Law statement



Correct



Unattempted



Incorrect



2/5

Q Lenz's law presented in



1834



1934



1826



1836

Explanation

Information



Correct



Unattempted



Incorrect



3/5

Q Lenz's law provides a relation between



current and magnetic field



force on a current carrying conductor and magnetic field



induced emf and the rate of change of magnetic flux



none of these



Correct



Unattempted



Incorrect



4/5

Q Lenz's law does not violated the principle of



conservation of mass



conservation of energy



conservation of charge



conservation of momentum



Correct



Unattempted



Incorrect



5/5

Q The direction of the induced emf during electromagnetic induction is determined by



Lenz's law



Faraday's law



Ampere's law



none of these

Explanation

Induced current direction determine by Lenz's law



QUIZZES

Practice Test 41



5 Questions



5 min

Topics

Mutual Inductance

Start Quiz



1/5



5 min



Hint

Q . One henry is equal to

 $V s^{-1} A$  $N m A^{-1}$  $V^{-1} s A$  $V s A^{-1}$



2/5



5 min



Hint

Q Mathematically the mutual inductance inductance may be defined as



$$- \frac{\mathcal{E}_s}{\frac{\Delta I_p}{\Delta t}}$$



$$\frac{\mathcal{E}_s}{\frac{\Delta I_p}{\Delta t}}$$



$$\frac{\mathcal{E}_s}{\frac{\Delta V}{\Delta t}}$$



none of these





3/5



5 min



Hint

Q . The SI unit of mutual inductance is.



Farad



Coulomb



Henry



Ampere





4/5



5 min



Hint

Q . One henry is equal to



1 ohm \times 1 sec



1 ohm \times 1 hertz



1 ohm \times 1 metre



all of above





5/5



5 min



Hint

Q If one coil is wound on an iron core, the flux through it will



Remains constant



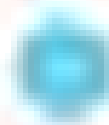
Decrease



Increase



Becomes zero





Correct



Unattempted



Incorrect



1/5

Q · One henry is equal to



$Vs^{-1}A$



NmA^{-1}



$V^{-1}sA$



$Vs.A^{-1}$

Explanation

$$\epsilon = M \frac{\Delta I}{\Delta t} \Rightarrow M = \epsilon / \left(\frac{\Delta I}{\Delta t} \right) \Rightarrow H = VSA^{-1}$$



Correct



Unattempted



Incorrect



2/5

Q Mathematically the mutual inductance inductance may be defined as



$$-\frac{\epsilon_s}{\frac{\Delta I_p}{\Delta t}}$$



$$\frac{\epsilon_s}{\frac{\Delta I_p}{\Delta t}}$$



$$\frac{\epsilon_s}{\frac{\Delta \phi}{\Delta t}}$$



none of these

Explanation

$$\epsilon_s = -M \frac{\Delta I_p}{\Delta t}$$



Correct



Unattempted



Incorrect



3/5

Q · The SI unit of mutual inductance is:



Farad



Coulomb



Henry



Ampere

Explanation

$$M = \epsilon / \left(\frac{\Delta I}{\Delta t} \right) \Rightarrow H = V S A^{-1}$$



Correct



Unattempted



Incorrect



4/5

Q · One henry is equal to



1 ohm × 1 sec



1 ohm × 1 hertz



1 ohm × 1 metre



all of above

Explanation

$$\epsilon = M \frac{\Delta I}{\Delta t} \Rightarrow IR = M \frac{\Delta I}{\Delta t} \Rightarrow M = r \times \Delta t \quad 1H = 1\Omega \times 1\text{sec}$$



Correct



Unattempted



Incorrect



5/5

Q If one coil is wound on an iron core, the flux through it will



Remains constant



Decrease



Increase



Becomes zero

Explanation

Because iron is magnetic material



QUIZZES

Practice Test 42



5 Questions



5 min

Topics

Self Induction

Start Quiz



1/5



5 min



Hint

Q . Self induction is expressed as



$$\varepsilon_L = \frac{\Delta I}{\Delta t}$$



$$\varepsilon_L = L \frac{\Delta I}{\Delta t}$$



$$\varepsilon_L = \frac{\Delta \phi}{\Delta t}$$



$$\varepsilon_L = -L \frac{\Delta I}{\Delta t}$$



2/5



5 min



Hint

Q When the rate of change of current in a coil is unity then the induced emf is equal to



number of turns of the coil



total flux linked with the coil



coefficient of self inductance



none of the above





3/5



5 min



Hint

Q . One Henry (H) equals



Vs A

Vs A^2 Vs A^{-1} Vs A^{-2} 



4/5



5 min



Hint

Q . Self inducting coils are called



inductors



conductors



insulators



sem conductors





5/5



5 min



Hint

Q . Unit of inductance is



Henry

 $Vs A^{-1}$  Ω_s 

all of these





Correct



Unattempted



Incorrect



1/5

Q Self induction is expressed as



$$\epsilon_L = \frac{\Delta I}{\Delta t}$$



$$\epsilon_L = L \frac{\Delta I}{\Delta t}$$



$$\epsilon_L = \frac{\Delta \phi}{\Delta t}$$



$$\epsilon_L = -L \frac{\Delta I}{\Delta t}$$

Explanation

Formula



Correct



Unattempted



Incorrect



2/5

Q When the rate of change of current in a coil is unity then the induced emf is equal to



number of turns of the coil



total flux linked with the coil



coefficient of self inductance



none of the above

Explanation

$$\varepsilon = L \frac{\Delta I}{\Delta t} = L(1) = L$$



Correct



Unattempted



Incorrect



3/5

Q · One Henry (H) equals



Vs A



Vs A²



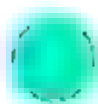
Vs A⁻¹



Vs A⁻²

Explanation

$$L = \epsilon / \left(\frac{\Delta I}{\Delta t} \right) \Rightarrow 1H = VSA^{-1}$$



Correct



Unattempted



Incorrect



4/5

Q · Self inducting coils are called



inductors



conductors



insulators



sem conductors

Explanation

Definition



Correct



Unattempted



Incorrect



5/5

Q · Unit of inductance is



Henry



$Vs A^{-1}$



Ω_s



all of these

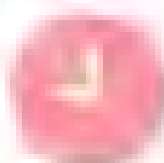


QUIZZES

Practice Test 43



5 Questions



5 min

Topics

Energy stored in an inductor

Start Quiz



1/5



5 min



Hint

Q . A coil of wire is also called



insulator



sem-conductor



inductor



all of above



2/5



5 min



Hint

Q Energy stored per unit volume inside the solenoid is called



mass density



energy dens.ity



charge density



volume density





3/5



5 min



Hint

Q Magnetic potential energy stored in an inductor depends upon



under root of the value of current



cube root of the value of current



cube of the value of current



square of the value of current





4/5



5 min



Hint

Q . An Inductor may store energy in



its magnetic field



its electric field



its co



a neighboring circuit





5/5



5 min



Hint

$\frac{B^2}{2\mu_0}$ is the expression of



lenz's law



magnetic energy



magnetic energy density



back emf





Correct



Unattempted



Incorrect



1/5

Q - A coil of wire is also called



insulator



sem-conductor



Inductor



all of above



Correct



Unattempted



Incorrect



2/5

Q Energy stored per unit volume inside the solenoid is called



mass density



energy density



charge density



volume density



Correct



Unattempted



Incorrect



3/5

Q Magnetic potential energy stored in an inductor depends upon



under root of the value of current



cube root of the value of current



cube of the value of current



square of the value of current



Correct



Unattempted



Incorrect



4/5

Q · An inductor may store energy in



its magnetic field



its electric field



its co



a neighboring circuit



Correct



Unattempted



Incorrect



5/5

$\frac{B^2}{2\mu_0}$ is the expression of



lenz's aw



magnetic energy



magnetic energy density



back emf

Explanation

$$\text{Energy} = \frac{E}{V} = \frac{B^2}{2\mu_0}$$

Density

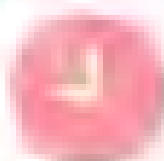


QUIZZES

Practice Test 44



5 Questions



5 min

Topics

Alternating Current Generator

[Start Quiz](#)



1/5



5 min



Hint

Q A.C generator is a device which converts



electrical energy into mechanical energy



mechanical energy into electrical energy



chemical energy into mechanical energy



heat energy into electrical energy



2

3

4

5



2/5



5 min



Hint

Q A device that converts mechanical energy into electrical energy is called



A.C generator



Motor



Converter



Vibrator





3/5



5 min



Hint

Q . An alternating current is that which



Flows intermediately



Varies in magnitude



Reverses its direction several times per second



None of the above





4/5



5 min



Hint

Q . Commutator was invented in



1834



1820



1840



1835





5/5



5 min



Hint

Q : Alternating current generator use :



Split rings



Slip rings



Loop rings



Coiled rings





Correct



Unattempted



Incorrect



1/5

Q A.C generator is a device which converts:



electrical energy into mechanical energy



mechanical energy into electrical energy



chemical energy into mechanical energy



heat energy into electrical energy

Explanation

Law of conservation of energy



Correct



Unattempted



Incorrect



2/5

Q A device that converts mechanical energy into electrical energy is called



A.C generator



Motor



Converter



Vibrator

Explanation

Definition



Correct



Unattempted



Incorrect



3/5

Q · An alternating current is that which



Flows intermediately



Var es in magnitude



Reverses its direction severa times per second



None of the above

Explanation

Property of A.C generator



Correct



Unattempted



Incorrect



4/5

Q Commutator was invented in



1834



1820



1840



1835



Correct



Unattempted



Incorrect



5/5

Q Alternating current generator use



Split rings



Slip rings



Loop rings



Coiled rings

Explanation

Construction of A.C generator



QUIZZES

Practice Test 45



2 Questions



5 min

Topics

General Knowledge, Biology, Chemistry, Physics, English, Urdu, Math

Generators

Start Quiz



1/2



5 min



Hint

Q A device which converts electrical energy into mechanical energy is called



transformer



AC generator



DC motor



DC generator



2/2



5 min



Hint

Q In D C generator output sine curve with the _____ half inverted



Lower



Upper



Both A and B



None



Correct



Unattempted



Incorrect



1/2

Q A device which converts electrical energy into mechanical energy is called



transformer



AC generator



DC motor



DC generator

Explanation

Law of conservation of energy



Correct



Unattempted



Incorrect



2/2

Q In D C generator output sine curve with the _____ half inverted



Lower



Upper



Both A and B



None

Explanation

Output sine wave



QUIZZES

Practice Test 46



5 Questions



5 min

Topics



Start Quiz



1/5



5 min



Hint

Q If the motor is overloaded, then the magnitude of "Back emf"



increases



decreases



constant



becomes zero



2/5



5 min



Hint

Q A D.C electric motor is based on the interaction of current and magnetic field and the principle employed is the same as in a



converter



thermo couple



D.C dynamo



D.C galvanometer





3/5



5 min



Hint

Q The back emf in a motor is 120 V when motor is turning of 1680 rev/min What is back emf when motor turns 3360 rev/min?



240 V



240 J



240 C/J



both A and C





4/5



5 min



Hint

Q An electric generator is based on the principle of



Faraday's law



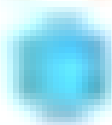
Lenz's law



Ampere law



Gauss's law





5/5



5 min



Hint

Q With the decrease in speed of motor, magnitude of back e m f



remains same



increases



decreases



first increases then decreases





Correct



Unattempted



Incorrect



1/5

Q If the motor is overloaded, then the magnitude of "Back emf"



increases



decreases



constant



becomes zero

Explanation

In overloaded $\omega \propto \text{Angular velocity}$



Correct



Unattempted



Incorrect



2/5

Q A D.C electric motor is based on the interaction of current and magnetic field and the principle employed is the same as in a



converter



thermo couple



D.C dynamo



D.C galvanometer



Correct



Unattempted



Incorrect



3/5

Q The back emf in a motor is 120 V when motor is turning of 1680 rev/min What is back emf when motor turns 3360 rev/min?



240 V



240 J



240 C/J



both A and C

Explanation

$$\epsilon \propto \omega \Rightarrow \text{if } \omega = 2\omega \text{ then } \epsilon = 2\epsilon$$



Correct



Unattempted



Incorrect



4/5

Q An electric generator is based on the principle of



Faraday's law



Lenz's law



Ampere law



Gauss's law



Correct



Unattempted



Incorrect



5/5

Q With the decrease in speed of motor, magnitude of back e m f



remains same



increases



decreases



first increases then decreases

Explanation

$\epsilon \propto \text{Angular Speed}$



QUIZZES

Practice Test 47



5 Questions



5 min

Topics

Transformer

Start Quiz



1/5



5 min



Hint

Q . A transformer has



Two coil



on y one coil



works on the princ ple of mutual induction



none of these



2/5



5 min



Hint

Q . The coils of a transformer are



magnetically linked



electrically linked



both A and B



none of these





3/5



5 min



Hint

Q When current I passes through a resistance R , the power loss due to heating effect is:

calculated by I^2R 

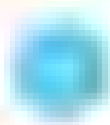
zero



maximum



all of above





4/5



5 min



Hint

Q Eddy currents are produced in a material when it is



heated



placed in an electric field



placed in a uniform magnetic field



placed in time varying magnetic field





5/5



5 min



Hint

Q In transformer which of the following quantities has same value in primary and secondary



rate of change of magnetic flux



voltage



current



none of these





Correct



Unattempted



Incorrect



1/5

Q - A transformer has



Two coil



only one coil



works on the principle of mutual induction



none of these



Correct



Unattempted



Incorrect



2/5

Q · The coils of a transformer are



magnetically linked



electrically linked



both A and B



none of these

Explanation

Transformer of coils have no electrical connection, only magnetically link.



Correct



Unattempted



Incorrect



3/5

Q When current I passes through a resistance R , the power loss due to heating effect is:



calculated by I^2R



zero



maximum



all of above



Correct



Unattempted



Incorrect



4/5

Q Eddy currents are produced in a material when it is



heated



placed in an electric field



placed in a uniform magnetic field



placed in time varying magnetic field



Correct



Unattempted



Incorrect



5/5

Q In transformer which of the following quantities has same value in primary and secondary



rate of change of magnetic flux



voltage



current



none of these

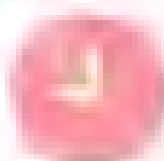


QUIZZES

Practice Test 48



5 Questions



5 min

Topics

Alternating current

[Start Quiz](#)



1/5



5 min



Hint

Q V_{rms} be the root mean square of value of emf then its peak value is given by



$$\frac{V_{rms}}{\sqrt{2}}$$



$$\sqrt{2} V_{rms}$$



$$\frac{2}{\sqrt{2} V_{rms}}$$



$$\frac{V_{rms}}{2}$$



2/5



5 min



Hint

Q : If I_0 is the peak value of current, then its root mean square value is given by



$\sqrt{2}I_0$



$2I_0$



I_0



$0.7 I_0$





3/5



5 min



Hint

Q Using $\theta = \omega t$ and $\omega = \frac{2\pi}{T}$ the angle through which the coil of the A C generator rotates when $t = \frac{T}{2}$ is

 π 

Zero

 $\frac{\pi}{2}$  2π 



4/5



5 min



Hint

Q The most common source of an A C voltage is



motor



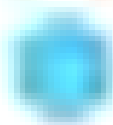
cell



generator



thermocouple





5/5



5 min



Hint

Q During each cycle AC voltage reaches a peak value



once



twice



thrice



four times





Correct



Unattempted



Incorrect



1/5

Q V_{rms} be the root mean square of value of emf then its peak value is given by



$$\frac{V_{rms}}{\sqrt{2}}$$



$$\sqrt{2} V_{rms}$$



$$\frac{2}{\sqrt{2} V_{rms}}$$



$$\frac{V_{rms}}{2}$$

Explanation

$$V_{rms} = \frac{V_o}{\sqrt{2}}$$



Correct



Unattempted



Incorrect



2/5

Q If I_o is the peak value of current, then its root mean square value is given by



$$\sqrt{2}I_o$$



$$2I_o$$



$$I_o$$



$$0.707 I_o$$

Explanation

$$I_{rms} = \frac{I_o}{\sqrt{2}} = 0.707 I_o$$



Correct



Unattempted



Incorrect



3/5

Q Using $\theta = \omega t$ and $\omega = \frac{2\pi}{T}$ the angle through which the coil of the A.C generator rotates when $t = \frac{T}{2}$ is

 π 

Zero

 $\frac{\pi}{2}$  2π

Explanation

$$\theta = \omega t = 2\pi f t = \frac{2\pi}{T} \times \frac{T}{2} = \pi$$



Correct



Unattempted



Incorrect



4/5

Q The most common source of an A.C voltage is



motor



B

cell



generator



thermocouple



Correct



Unattempted



Incorrect



5/5

Q During each cycle AC voltage reaches a peak value



once



twice



thrice



four times

Explanation

Positive peak and negative peak



QUIZZES

Practice Test 49



5 Questions



5 min

Topics

Phase of A C

Start Quiz



1/5



5 min



Hint

Q The phase angle at +ve (posit ve) peak is



$$\frac{\pi}{2}$$



$$\pi$$



$$\frac{3\pi}{2}$$



$$2\pi$$

2

3

4

5



2/5



5 min



Hint

Q Product of angular frequency and time period is

 2π  $\frac{1}{2\pi}$ 

1

 π 



3/5



5 min



Hint

Q When A.C voltage is applied to an inductor, the



Voltage V leads current I by 90°



Voltage V leads current I by 270°



Voltage V leads current I by 0°



None of these





4/5



5 min



Hint

Q Which of the following statement is correct for an A.C circuit



The current depends upon the components connected in circuits



The current lags the voltage by a phase angle of 90°



The current leads the voltage by a phase angle of 90°



The current and voltage are in same phase





5/5



5 min



Hint

Q The circuit in which current and voltage are in phase, the power factor is



Double



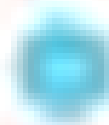
three times



One



Zero





Correct



Unattempted



Incorrect



1/5

Q The phase angle at +ve (positive) peak is



$\frac{\pi}{2}$



π



$\frac{3\pi}{2}$



2π

Explanation

$$V = V_o \sin\left(\frac{\pi}{2}\right) = +V_o$$



Correct



Unattempted



Incorrect



2/5

Q Product of angular frequency and time period is



2π



$\frac{1}{2\pi}$



1



π



Correct



Unattempted



Incorrect



3/5

Q When A.C voltage is applied to an inductor, the



Voltage V leads current I by 90°



Voltage V leads current I by 270°



Voltage V leads current I by 0°



None of these



Correct



Unattempted



Incorrect



4/5

Q Which of the following statement is correct for an A.C circuit



The current depends upon the components connected in circuits



The current lags the voltage by a phase angle of 90°



The current leads the voltage by a phase angle of 90°



The current and voltage are in same phase

Explanation

Depending upon circuit elements current can lead or lag



Correct



Unattempted



Incorrect



5/5

Q The circuit in which current and voltage are in phase, the power factor is



Double



three times



One



Zero

Explanation

$$Pf = \cos(0^\circ) = 1$$



QUIZZES

Practice Test 50



9 Questions



5 min

Topics

Start Quiz



1/9



5 min



Hint

Q In pure resistive A C circuit, instantaneous value of voltage or current



current lags behind voltage



current leads voltage by $\frac{\pi}{2}$



both are in phase



voltage leads current by $\frac{\pi}{2}$



2/9



5 min



Hint

Q • The maximum current I_0 passing through a resistance R connected with alternating voltage V_0 is given by



$$I_0 = R \times V_0$$



$$I_0 = \frac{V_0}{R}$$



$$I_0 = \frac{R}{V_0}$$



$$I_0 = V_0 \times R$$





3/9



5 min



Hint

Q The relation for the resistance according to Ohm's law is given by

 $R=IV$  $V/I=R$  $I/V=R$  $1/I \cdot V=R$ 



4/9



5 min



Hint

Q The power dissipated in a resistive circuit is



$$P=I^2R$$



$$P=IV$$



$$P=V^2/R$$



all of these



5/9



5 min



Hint

Q The basic element in a D C circuit which controls the current or voltage is called



inductor



resistor



capacitor



voltmeter





6/9



5 min



Hint

Q . The symbol used for inductor is



R



L



C



R-C



7/9



5 min



Hint

Q At any time 't' the potential difference across the terminals of the resistors is given by



$$V = V_0 \sin \omega t$$



$$V = V_0 \sin \omega t$$



$$V = V_0 \cos \omega t$$



$$V = V_0 \cos \omega t$$





8/9



5 min



Hint

Q The basic circuit element or elements in an A.C circuit is



capacitor



resistor



inductor



all of these



9/9



5 min



Hint

Q The power dissipation in AC circuit is expressed as



$$P = I_{rms} \cdot V_{rms} \cos 2\theta$$



$$P = I \cdot V \cos \theta$$



$$P = I_{rms} \cdot V_{rms} \sin \theta$$



$$P = IV \sin 2\theta$$



Correct



Unattempted



Incorrect



1/9

Q In pure resistive A C circuit, instantaneous value of voltage or current



current lags behind voltage



current leads voltage by $\frac{\pi}{2}$



both are in phase



voltage leads current by $\frac{\pi}{2}$

Explanation

Vector diagram for res stor



Correct



Unattempted



Incorrect



2/9

Q In pure resistive A C circuit, instantaneous value of voltage or current



Explanation

Vector diagram for res stor



Correct



Unattempted



Incorrect



2/9

Q The maximum current I_0 passing through a resistance R connected with alternating voltage V_0 is given by



$$I_0 = R \times V_0$$



$$I_0 = \frac{V_0}{R}$$



$$I_0 = \frac{R}{V_0}$$



$$I_0 = V_0 \times R$$

Explanation

By Ohms law



Correct



Unattempted



Incorrect



3/9

Q The relation for the resistance according to Ohm's law is given by



$R=IV$



$V/I = R$



$I/V=R$



$1/IV = R$



Correct



Unattempted



Incorrect



4/9

Q The power dissipated in a resistive circuit is



$$P=I^2R$$



$$P=IV$$



$$P=V^2/R$$



all of these

Explanation

Text book formula



Correct



Unattempted



Incorrect



5/9

Q The basic element in a D C circuit which controls the current or voltage s called



inductor



res stor



capacitor



voltmeter

Explanation

Resistor can work in AC and DC circuits



Correct



Unattempted



Incorrect



6/9

Q · The symbol used for inductor is



R



L



C



R-C



Correct



Unattempted



Incorrect



7/9

Q At any time 't' the potential difference across the terminals of the resistors is given by



$$V = V_0 \sin \omega t$$



$$V = V_0 \sin \omega t$$



$$V = V_0 \cos \omega t$$



$$V = V_0 \cos \omega t$$

Explanation

Voltage across resistor changes like source voltage i.e. sinusoidal



Correct



Unattempted



Incorrect



8/9

Q The basic circuit element or elements in an A.C circuit is



capacitor



resistor



inductor



all of these

Explanation

All three elements control current in AC



Correct



Unattempted



Incorrect



9/9

Q The power dissipation in AC circuit is expressed as



$$P = I_{rms} V_{rms} \cos 2\theta$$



$$P = I V \cos \theta$$



$$P = I_{rms} V_{rms} \sin \theta$$



$$P = IV \sin 2\theta$$

Explanation

From text book

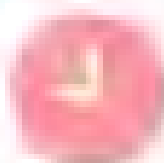


QUIZZES

Practice Test 51



5 Questions



5 min

Topics

A C through Capacitor

Start Quiz



1/5



5 min



Hint

Q In the capacitive circuit of A.C quantity when $q = 0$ the slope of $q-t$ curve is



maximum



minimum



zero



negative



2/5



5 min



Hint

Q

The device that allows only the continuous flow of an A.C through a circuit is



capacitor



resistor



reactor



inductor





3/5



5 min



Hint

Q Power dissipation in pure capacitance circuit is:



infinite



zero



minimum



maximum





4/5



5 min



Hint

Q The capacitive reactance to pure D C is



zero



infinite



variable



equal to inductive reactance





5/5



5 min



Hint

Q . Direct current cannot flow through



inductor



res stor



transistor



capacitor





Correct



Unattempted



Incorrect



1/5

Q In the capacitive circuit of A C quantity when $q = 0$ the slope of $q-t$ curve is



maximum



minimum



zero



negative

Explanation

$q-t$ curve is sinusoidal and at $q = 0$ it cuts x axis with maximum slope.



Correct



Unattempted



Incorrect



2/5

Q.

The device that allows only the continuous flow of an A C through a circuit is



capacitor



resistor



reactor



inductor

Explanation

Capacitor cannot conduct DC continuously



Correct



Unattempted



Incorrect



3/5

Q Power dissipation in pure capacitance circuit is



infinite



zero



minimum



maximum



Correct



Unattempted



Incorrect



4/5

Q The capacitive reactance to pure D C is



zero



infinite



variable



equal to inductive reactance



Correct



Unattempted



Incorrect



5/5

Q · Direct current cannot flow through



inductor



resistor



transistor



capacitor

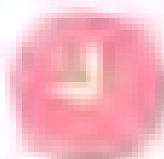


QUIZZES

Practice Test 52



5 Questions



5 min

Topics

1. C through Inducto

Start Quiz



1/5



5 min



Hint

Q . A pure inductive coil is that which has



None impedance



No ohmic resistance



Same ohmic resistance



None of these



2/5



5 min



Hint

Q The instantaneous voltage across a pure inductance is



In phase with current



Lags the current by 90°



Leads the current by 90°



None of these





3/5



5 min



Hint

Q . Radio frequency choke is



Iron cored



Air Cored



Air as well as iron cored



None of these





4/5



5 min



Hint

Q The inductive reactance can be expressed by the relation



$$X_L = \frac{1}{\omega L}$$



$$X_L = \frac{1}{2\pi\omega L}$$



$$X_L = \omega L$$



$$X_L = \frac{\omega L}{2\pi f}$$





5/5



5 min



Hint

Q Reactance of inductor is very high when there is



high frequency current



low frequency current



high frequency inductor



low frequency inductor





Correct



Unattempted



Incorrect



1/5

Q - A pure inductive coil is that which has



None impedance



No ohmic resistance



Same ohmic resistance



None of these

Explanation

Definition of inductive coil



Correct



Unattempted



Incorrect



2/5

Q The instantaneous voltage across a pure inductance is



In phase with current



Lags the current by 90°



Leads the current by 90°



None of these



Correct



Unattempted



Incorrect



3/5

Q : Radio frequency choke is



iron cored



Air Cored



Air as well as Iron cored



None of these

Explanation

Depends upon the dielectric of capacitor



Correct



Unattempted



Incorrect



4/5

Q The inductive reactance can be expressed by the relation



$$X_L = \frac{1}{\omega L}$$



$$X_L = \frac{1}{2\pi\omega L}$$



$$X_L = \omega L$$



$$X_L = \frac{\omega L}{2\pi f}$$

Explanation

$$\frac{V_{rms}}{I_{rms}} = X_L = \omega L$$



Correct



Unattempted



Incorrect



5/5

Q Reactance of inductor is very high when there is



high frequency current



low frequency current



high frequency inductor



low frequency inductor

Explanation

$$X_L \propto f$$



QUIZZES

Practice Test 53



5 Questions



5 min

Topics

RC series circuit and RL series circuit

[Start Quiz](#)



1/5



5 min



Hint

Q At high frequency, the current through a capacitor of A C circuit will be



large



small



infinite



zero



2/5



5 min



Hint

Q With increase of frequency of A C supply, the inductive reactance is



Decrease



increase as square of frequency



Remain unchanged



Increase as directly to frequency





3/5



5 min



Hint

Q The phase angle in an R.L series circuit is expressed as



$$\theta = \tan^{-1} \left(\frac{\omega L}{R} \right)$$



$$\theta = \tan \left(\frac{\omega L}{R} \right)$$



$$\theta = \tan^{-1} \left(\frac{R}{\omega L} \right)$$



None of these





4/5



5 min



Hint

Q . In R-L series circuits



the current lags the applied voltage



the voltage lags the applied current



the current leads the applied voltage



none of these





5/5



5 min



Hint

Q The potential across the inductance leads the current by



$$\frac{\pi}{3}$$



$$\pi$$



$$\frac{2\pi}{3}$$



$$\frac{\pi}{2}$$





Correct



Unattempted



Incorrect



1/5

Q At high frequency, the current through a capacitor of A C circuit will be



large



small



infinite



zero

Explanation

$$I = \frac{V}{X_C} = (2\pi fC)V$$



Correct



Unattempted



Incorrect



2/5

Q With increase of frequency of A C supply, the inductive reactance s



Decrease



Increase as square of frequency



Remain unchanged



Increase as directly to frequency

Explanation

$$X_L = 2\pi fL$$



Correct



Unattempted



Incorrect



3/5

Q The phase angle in an R.L series circuit is expressed as



$$\theta = \tan^{-1} \left(\frac{\omega L}{R} \right)$$



$$\theta = \tan \left(\frac{\omega L}{R} \right)$$



$$\theta = \tan^{-1} \left(\frac{R}{\omega L} \right)$$



None of these

Explanation

$$\theta = \tan^{-1} \left(\frac{X_L}{R} \right) = \tan^{-1} \left(\frac{\omega L}{R} \right)$$



Correct



Unattempted



Incorrect



4/5

Q · In R-L series circuits



the current lags the applied voltage



the voltage lags the applied current



the current leads the applied voltage



none of these



Correct



Unattempted



Incorrect



5/5

Q The potential across the inductance leads the current by



$$\frac{\pi}{3}$$



$$\pi$$



$$\frac{2\pi}{3}$$



$$\frac{\pi}{2}$$



QUIZZES

Practice Test 54



5 Questions



5 min

Topics

Series Resonance Circuit

Start Quiz



1/5



5 min



Hint

Q Resonating frequency of RLC series circuit is f_r - ____



$$\frac{2\pi}{\sqrt{LC}}$$



$$\frac{1}{2\pi} \sqrt{LC}$$



$$\frac{1}{2\pi\sqrt{LC}}$$



$$2\pi\sqrt{LC}$$

2

3

4

5



2/5



5 min



Hint

Q At resonance RLC series circuit shows the behavior of



pure resistive circuit



pure capacitive circuit



pure inductive circuit



pure RLC circuit





3/5



5 min



Hint

Q . At resonance V_L in R-L-C series circuit



the voltage drop across capacitance



the voltage drop across inductance



the current drop across inductance



the current drop across capacitance





4/5



5 min



Hint

Q At resonance the value of current in RLC series circuit is equal to

 V_0/R  $V_0 R$  $1/2$ 

Zero





5/5



5 min



Hint

Q In R-L-C circuit, the energy is dissipated in



R only



R and L



R and C



R, L and C





Correct



Unattempted



Incorrect



1/5

Q Resonating frequency of RLC series circuit is f_r -



$$\frac{2\pi}{\sqrt{LC}}$$



$$\frac{1}{2\pi} \sqrt{LC}$$



$$\frac{1}{2\pi\sqrt{LC}}$$



$$2\pi\sqrt{LC}$$

Explanation

$$X_L = X_C \Rightarrow 2\pi f_r L = \frac{1}{2\pi\sqrt{LC}}$$



Correct



Unattempted



Incorrect



2/5

Q At resonance RLC series circuit shows the behavior of



pure resistive circuit



pure capacitive circuit



pure inductive circuit



pure RLC circuit

Explanation

X_L cancel out X_C at resonance



Correct



Unattempted



Incorrect



3/5

Q · At resonance V_L in R-L-C series circuit



the voltage drop across capacitance



the voltage drop across inductance



the current drop across inductance



the current drop across capacitance

Explanation

$$V_L = I_{rms} X_L$$



Correct



Unattempted



Incorrect



4/5

Q At resonance the value of current in RLC series circuit is equal to



V_0/R



$V_0 R$



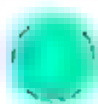
$1/2$



Zero

Explanation

$$Z = R \text{ so, } P = \frac{V_0}{R}$$



Correct



Unattempted



Incorrect



5/5

Q In R-L-C circuit, the energy is dissipated in



R only



R and L



R and C



R, L and C

Explanation

Capacitor and inductor stores energy



QUIZZES

Practice Test 55



5 Questions



5 min

Topics

Parallel Resonance Circuit

Start Quiz



1/5



5 min



Hint

Q At resonance frequency, the impedance of RLC parallel circuit is



zero



infinite



minimum



maximum



2/5



5 min



Hint

Q The Inductance (L) has a resistance which is



negligible small



zero



very large



Infinite





3/5



5 min



Hint

Q In L-C parallel circuit, the current at the resonance frequency is



minimum



maximum



zero



infinite





4/5



5 min



Hint

Q At the resonance the current is minimum in L C parallel circuit, the power factor is



0



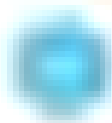
1



-1



infinite





5/5



5 min



Hint

Q The L-C parallel circuit is excited by an alternating source of voltage whose frequency



could be varied



could not be varied



is zero



none of these





Correct



Unattempted



Incorrect



1/5

Q At resonance frequency, the impedance of RLC parallel circuit is



zero



infinite



minimum



maximum

Explanation

Due to parallel connection of C and L.



Correct



Unattempted



Incorrect



2/5

Q The inductance (L) has a resistance which is



negligible small



zero



very large



infinite



Correct



Unattempted



Incorrect



3/5

Q In L-C parallel circuit, the current at the resonance frequency is



minimum



maximum



zero



infinite

Explanation

since impedance at resonance is maximum



Correct



Unattempted



Incorrect



4/5

Q At the resonance the current is minimum in L-C parallel circuit, the power factor is



0



1



1



infinite

Explanation

$$p.f = \cos(0^\circ) = 1$$



Correct



Unattempted



Incorrect



5/5

Q The L-C parallel circuit is excited by an alternating source of voltage whose frequency



could be varied



could not be varied



is zero



none of these

Explanation

AC source with variable frequency.



QUIZZES

Practice Test 56



5 Questions



5 min

Topics

Three Phase A C Supply

[Start Quiz](#)



1/5



5 min



Hint

Q The phase difference between each pair of coils of a three phase A C generator is

 0°  90°  120°  180°



2/5



5 min



Hint

Q The voltage across any two live lines in three phase AC supply is



400V



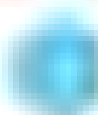
120V



230V



440V





3/5



5 min



Hint

Q . An A.C generator consists of a coil with



with a slip ring



with a pair of slip rings



with a pair of magnet



with a Commutator





4/5



5 min



Hint

Q When the combination of three coils rotate in three phase A.C generator, then



a voltage is generated



3 alternating voltage generated



no voltage generate



2 alternating voltage generated





5/5



5 min



Hint

Q The voltage across each of lines connected to terminals A,B & C of machine and the neutral line in three phase AC supply is



400V



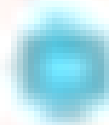
120V



230V



440V





Correct



Unattempted



Incorrect



1/5

Q The phase difference between each pair of coils of a three phase A.C generator is



0°



90°



120°



180°



Correct



Unattempted



Incorrect



2/5

Q The voltage across any two live lines in three phase AC supply is



400V



120V



230V



440V

Explanation

$$V_{p-p} = 400V$$



Correct



Unattempted



Incorrect



3/5

Q An A.C generator consists of a coil with



with a slip ring



with a pair of slip rings



with a pair of magnet



with a Commutator

Explanation

To top alternating current.



Correct



Unattempted



Incorrect



4/5

Q When the combination of three coils rotate in three phase A.C generator, then



a voltage is generated



3 alternating voltage generated



no voltage generate



2 alternating voltage generated

Explanation

Each coil generates its own voltage due to flux linkage



Correct



Unattempted



Incorrect



5/5

Q The voltage across each of lines connected to terminals A,B & C of machine and the neutral line in three phase AC supply is



400V



120V



230V



440V

Explanation

Line to neutral voltage is 230V



QUIZZES

Practice Test 57



5 Questions



5 min

Topics

Principle of Metal Detectors

[Start Quiz](#)



1/5



5 min



Hint

Q . Choke consumes extremely sma



current



charge



power



potentia.



2/5



5 min



Hint

Q Metal detector works with the help of



RC circuit



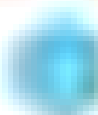
RL circuit



LC circuit



RLC series circuit





3/5



5 min



Hint

Q . An L-C circuit behaves like an



oscillating pendulum



oscillating mass-spring system



Amplifier



all of these





4/5



5 min



Hint

Q In metal detector the energy oscillates between



resistor and capacitor



capacitor and resonance



inductor and capacitor



resistor and inductor





5/5



5 min



Hint

Q The metal detectors are used to locate



buried metal objects



metal at security checks



both a and b



none of these





Correct



Unattempted



Incorrect



1/5

Q · Choke consumes extremely sma



current



charge



power



potentia



Correct



Unattempted



Incorrect



2/5

Q · Metal detector works with the help of



RC circuit



RL circuit



LC circuit



RLC series circuit

Explanation

LC parallel circuit



Correct



Unattempted



Incorrect



3/5

Q · An L-C circuit behaves like an



oscillating pendulum



oscillating mass-spring system



Amplifier



all of these

Explanation

Amplifies the frequency difference



Correct



Unattempted



Incorrect



4/5

Q In metal detector the energy oscillates between



resistor and capacitor



capacitor and resonance



inductor and capacitor



resistor and inductor

Explanation

LC parallel circuit



Correct



Unattempted



Incorrect



5/5

Q The metal detectors are used to locate



buried metal objects



metal at security checks



both a and b



none of these

Explanation

Detection of metals



QUIZZES

Practice Test 58



5 Questions



5 min

Topics

Electromagnetic Wave

Start Quiz



1/5



5 min



Hint

Q The electromagnetic spectrum contains



radio waves



X-rays



microwaves



all of these



2/5



5 min



Hint

Q Who proved that light waves are electromagnetic?



Faraday



Einstein



Maxwell



Enderson





3/5



5 min



Hint

Q In electromagnetic phenomenon the magnetic field, electric field and direction of their propagation are



opposite to each other



anti-parallel to each other



parallel



mutually orthogonal





4/5



5 min



Hint

Q The formula for speed of electromagnetic waves is



$$c = f\lambda$$



$$v = c\lambda$$



$$c = f/\lambda$$



$$c = \lambda/f$$





5/5



5 min



Hint

Q Which one of the following requires a material medium for their propagation



heat waves



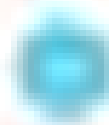
X-rays



sound waves



ultraviolet rays





Correct



Unattempted



Incorrect



1/5

Q The electromagnetic spectrum contains.



radio waves



X-rays



microwaves



all of these

Explanation

Regions of spectrum.



Correct



Unattempted



Incorrect



2/5

Q Who proved that light waves are electromagnetic?



Faraday



Einstein



Maxwell



Enderson

Explanation

Maxwell explanation



Correct



Unattempted



Incorrect



3/5

Q In electromagnetic phenomenon the magnetic field, electric field and direction of their propagation are



opposite to each other



anti-parallel to each other



parallel



mutually orthogonal.

Explanation

All three are at 90°



Correct



Unattempted



Incorrect



4/5

Q The formula for speed of electromagnetic waves is



$$c = f\lambda$$



$$v = c\lambda$$



$$c = f/\lambda$$



$$c = \lambda/f$$

Explanation

General wave equation



Correct



Unattempted



Incorrect



5/5

Q Which one of the following requires a material medium for their propagation



heat waves



X-rays



sound waves



ultraviolet rays

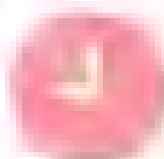


QUIZZES

Practice Test 59



5 Questions



5 min

Topics

of EMW

Start Quiz



1/5



5 min



Hint

Q By shaking an electrically charged object to and fro, it is produced



electromagnetic waves



electric waves



mechanical waves



matter waves



2/5



5 min



Hint

Q The electromagnetic waves which are propagated out in space from radio transmitting antenna are known as



radio waves



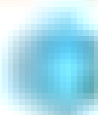
infrared waves



mechanical waves



matter waves





3/5



5 min



Hint

Q Which electromagnetic waves emitted from antenna



stationary waves



light waves



transverse waves



longitudinal waves





4/5



5 min



Hint

Q The voltage appears across a receiving antenna placed in space is usually due to the



radio waves of large number of frequencies



longitudinal waves of high frequency



light waves



radio waves of single frequencies





5/5



5 min



Hint

Q When we accelerate the charges, which type of waves are produced



mechanical waves



traveling waves



stationary waves



electromagnetic waves





Correct



Unattempted



Incorrect



1/5

Q By shaking an electrically charged object to and fro, it is produced



electromagnetic waves



electric waves



mechanical waves



matter waves

Explanation

It creates changing \vec{E} and then changing \vec{B}



Correct



Unattempted



Incorrect



2/5

Q The electromagnetic waves which are propagated out in space from radio transmitting antenna are known as



radio waves



infrared waves



mechanical waves



matter waves

Explanation

Transmitting antenna produces radio waves



Correct



Unattempted



Incorrect



3/5

Q Which electromagnetic waves emitted from antenna



stationary waves



light waves



transverse waves



longitudinal waves

Explanation

Antenna produce transverse waves.



Correct



Unattempted



Incorrect



4/5

Q The voltage appears across a receiving antenna placed in space is usually due to the



radio waves of large number of frequencies



longitudinal waves of high frequency



light waves



radio waves of single frequencies

Explanation

Different signal impinging upon antenna



Correct



Unattempted



Incorrect



5/5

Q When we accelerate the charges, which type of waves are produced



mechanical waves



traveling waves



stationary waves



electromagnetic waves

Explanation

Changing electric and magnetic fields



QUIZZES

Practice Test 60



5 Questions



5 min

Topics

Modulation

Start Quiz



1/5



5 min



Hint

Q The process of combining low frequency signal with a high frequency radio waves is called



amplification



resonance



demodulation



modulation



2/5



5 min



Hint

Q During frequency modulation when amplitude of signal is zero, the frequency of carrier waves is



zero



maximum



minimum



normal





3/5



5 min



Hint

Q For modulation purpose, high frequency radio waves are called



carrier waves



transverse waves



radio waves



longitudinal waves





4/5



5 min



Hint

Q Modulation is achieved by changing the



frequency and amplitude of the carrier waves



only frequency of the carrier wave



only amplitude of the carrier wave



none of these





5/5



5 min



Hint

Q As a result of modulation, the resultant wave is called



de-modulated carrier waves



carrier waves



both a & b



modulated carrier waves





Correct



Unattempted



Incorrect



1/5

Q The process of combining low frequency signal with a high frequency radio waves is called



amplification



resonance



demodulation



modulation

Explanation

Definition of modulation



Correct



Unattempted



Incorrect



2/5

Q During frequency modulation when amplitude of signal is zero, the frequency of carrier waves is



zero



maximum



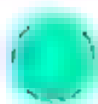
minimum



normal

Explanation

Frequency of carrier wave change with amplitude of signal



Correct



Unattempted



Incorrect



3/5

Q For modulation purpose, high frequency radio waves are called



carrier waves



transverse waves



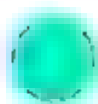
radio waves



longitudinal waves

Explanation

Process of modulation



Correct



Unattempted



Incorrect



4/5

Q Modulation is achieved by changing the



frequency and amplitude of the carrier waves



only frequency of the carrier wave



only amplitude of the carrier wave



none of these

Explanation

Definition of AM and FM



Correct



Unattempted



Incorrect



5/5

Q As a result of modulation, the resultant wave is called



de-modulated carrier waves



carrier waves



both a & b



modulated carrier waves

Explanation

Process of modulation

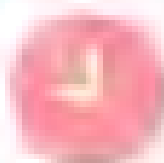


QUIZZES

Practice Test 61



5 Questions



5 min

Topics

Classification of Soils

[Start Quiz](#)



1/5



5 min



Hint

Q . Polymer solids are



Order solids



Disorder solids



in b/w order and disorder



Neither type



2/5



5 min



Hint

Q . Amorphous solids are



Order solid



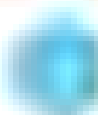
Disorder solid



In b/w order and disorder



None of the above





3/5



5 min



Hint

Q The temperature at which the vibrations becomes so great that the structure of the crystal breaks is called



Melting point



Critical temperature



Boiling point



None of these





4/5



5 min



Hint

Q . Examples of crystalline solids are



Copper



NaCl



Zirconia



All of above





5/5



5 min



Hint

Q Which one of the following is crystalline solid



zirconia



glassy solid



natural rubber



polystyrene





Correct



Unattempted



Incorrect



1/5

Q · Polymer solids are



Order solids



Disorder solids



In b/w order and disorder



Neither type

Explanation

Definition of polymeric solids



Correct



Unattempted



Incorrect



2/5

Q - Amorphous solids are



Order solid



Disorder solid



In b/w order and disorder



None of the above

Explanation

No specific arrangement of molecules



Correct



Unattempted



Incorrect



3/5

Q The temperature at which the vibrations becomes so great that the structure of the crystal breaks is called



Melting point



Critical temperature



Boiling point



None of these

Explanation

Definition of melting point.



Correct



Unattempted



Incorrect



4/5

Q · Examples of crystalline solids are



Copper



NaCl



Zirconia



All of above

Explanation

Regular structure



Correct



Unattempted



Incorrect



5/5

Q Which one of the following is crystalline solid



zirconia



glassy solid



natural rubber



polystyrene

Explanation

Example of crystalline solid



QUIZZES

Practice Test 62



5 Questions



5 min

Topics

Q1

deformed materials

Test Quiz



1/5



5 min



Hint

Q When a force is applied on a wire of length l which results in an increase in length then the stress is known as



tensile stress



tensile deformation



shear stress



volumetric stress



2/5



5 min



Hint

Q When a stress changes the shape of a body, it is called



volumetric stress



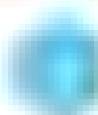
shear stress



tensile stress



compressional stress





3/5



5 min



Hint

Q . Stress is equal to



force

 $y(\epsilon)$  $\frac{y}{\epsilon}$  $\frac{1}{\epsilon}$ 



4/5



5 min



Hint

Q Substances which break just after the elastic limit is reached are called as



ductile substances



hard substances



brittle substances



soft substances





5/5



5 min



Hint

Q Strain energy in deformed material is proportional to



square of the extension



under root of the extension



cube root of the extension



extension produced





Correct



Unattempted



Incorrect



1/5

Q When a force is applied on a wire of length l which results in an increase in length then the stress is known as



tensile stress



tensile deformation



shear stress



volumetric stress



Correct



Unattempted



Incorrect



2/5

Q When a stress changes the shape of a body, it is called



volumetric stress



shear stress



tensile stress



compressional stress



Correct



Unattempted



Incorrect



3/5

Q · Stress is equal to



force



$y(\epsilon)$



$\frac{y}{\epsilon}$



$\frac{1}{\epsilon}$

Explanation

$$y = \frac{\sigma}{\epsilon} \Rightarrow \sigma = y(\epsilon)$$



Correct



Unattempted



Incorrect



4/5

Q Substances which break just after the elastic limit is reached are called as



ductile substances



hard substances



brittle substances



soft substances



Correct



Unattempted



Incorrect



5/5

Q Strain energy in deformed material is proportional to



Explanation

$$\text{Energy} = \frac{1}{2} \frac{EA \epsilon_1^2}{L}$$



Correct



Unattempted



Incorrect



5/5

Q Strain energy in deformed material is proportional to



square of the extension



under root of the extension



cube root of the extension



extension produced

Explanation

$$\text{Energy} = \frac{1}{2} \frac{EAx^2}{L}$$



QUIZZES

Practice Test 63



5 Questions



5 min

Topics

Electrical properties of Solids
band theory Intrinsic and extrinsic
conductors

Start Quiz



1/5



5 min



Hint

Q . The Si and Ge lies in the _____ group of periodic table

3rd4th5th1st



2/5



5 min



Hint

Q Those substances which have valence electrons tightly bound to their atoms are called



conductors



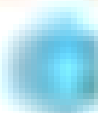
insulators



super conductors



sem conductors





3/5



5 min



Hint

Q The doped semi conductors materials are called



intrinsic semi-conductors



extrinsic insulators



extrinsic semi conductors



Intrinsic conductors





4/5



5 min



Hint

Q The band in atom containing conductive electrons, according to "band theory of solids" is



conduction band



valence band



forbidden band



first conduction band then forbidden band





5/5



5 min



Hint

Q When a silicon crystal is doped with a pentavalent element, it becomes



p-type semiconductor



n-type semiconductor



intrinsic semiconductor



extrinsic semiconductor Q





Correct



Unattempted



Incorrect



1/5

Q The Si and Ge lies in the _____ group of periodic table



3rd



4th



5th



1st

Explanation

4th group.



Correct



Unattempted



Incorrect



2/5

Q Those substances which have valence electrons tightly bound to their atoms are called



conductors



insulators



super conductors



sem conductors

Explanation

Insulators do not have free electrons



Correct



Unattempted



Incorrect



3/5

Q The doped semi-conductors materials are called



intrinsic semi-conductors



extrinsic insulators



extrinsic semi-conductors



Intrinsic conductors



Correct



Unattempted



Incorrect



4/5

Q The band in atom containing conductive electrons, according to "band theory of solids" is



conduction band



valence band



forbidden band



first conduction band then forbidden band

Explanation

Conduction bands contain conductive electrons



Correct



Unattempted



Incorrect



5/5

Q When a silicon crystal is doped with a pentavalent element, it becomes



p-type semiconductor



n type semiconductor



Intrinsic semiconductor



extrinsic semiconductor Q



QUIZZES

Practice Test 64



5 Questions



5 min

Topics

Superconductors

[Start Quiz](#)



1/5



5 min



Hint

Q The first super conductor was discovered in



1923



1918



1905



1911



2/5



5 min



Hint

Q Recently a complex crystalline structure known as yttrium barium copper oxide ($\text{YBa}_2\text{Cu}_3\text{O}_7$) have reported to become super conductor at



163 K



169 K



200 K



100 K





3/5



5 min



Hint

Q Yttrium barium copper oxide ($\text{YBa}_2\text{Cu}_3\text{O}_7$) become superconductor at



163 K

 -100°C 

Both (A) and (B)



None of these





4/5



5 min



Hint

Q The formula for Yttrium barium copper oxide is

 $\text{Y}_2\text{Ba}_2\text{Cu}_3\text{O}_7$  $\text{YBa}_2\text{Cu}_3\text{O}_7$  $\text{YBa}_3\text{Cu}_2\text{O}_7$  $\text{Y}_2\text{Ba}_2\text{Cu}_3\text{O}_6$ 



5/5



5 min



Hint

Q . The temperature 77K is the



melting point of nitrogen



boiling point of nitrogen



boiling point of hydrogen



melting point of hydrogen





Correct



Unattempted



Incorrect



1/5

Q The first super conductor was discovered in



1923



1918



1905



1911

Explanation

Discovered by kmaerlingh onnes.



Correct



Unattempted



Incorrect



2/5

Q Recently a complex crystalline structure known as yttrium barium copper oxide ($\text{YBa}_2\text{Cu}_3\text{O}_7$) have reported to become super conductor at



163 K



169 K



200 K



100 K

Explanation

Critical temperature



Correct



Unattempted



Incorrect



3/5

Q Yttrium barium copper oxide ($\text{YBa}_2\text{Cu}_3\text{O}_7$) become superconductor at



163 K



-100°C



Both (A) and (B)



None of these

Explanation

$$163\text{k} = 100^\circ\text{C}$$



Correct



Unattempted



Incorrect



4/5

Q The formula for Yttrium barium copper oxide is



$\text{Y}_2\text{Ba}_2\text{Cu}_3\text{O}_7$



$\text{YBa}_2\text{Cu}_3\text{O}_7$



$\text{YBa}_3\text{Cu}_2\text{O}_7$



$\text{Y}_2\text{Ba}_2\text{Cu}_3\text{O}_6$

Explanation

A complex crystalline structure.



Correct



Unattempted



Incorrect



5/5

Q · The temperature 77K is the



melting point of nitrogen



boiling point of nitrogen



boiling point of hydrogen



melting point of hydrogen

Explanation

Boiling point



QUIZZES

Practice Test 65



5 Questions



5 min

Topics

Start Quiz



1/5



5 min



Hint

Q An atom having resultant magnetic field



behaves like a tiny magnet



is called magnetic dipole



is called paramagnetic



all of above



2/5



5 min



Hint

Q . A pentavalent impurity in Si



a free electron and a free hole



a free hole



a free electron



No free particle





3/5



5 min



Hint

Q The phenomenon in which magnetization reduce to zero by reversing the magnetizing current is called



saturation



coercivity



retentivity



hysteresis loss





4/5

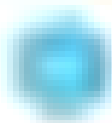


5 min



Hint

Q A single domain in ferromagnetic substance contain near y

 $10^8 - 10^9$  $10^{12} - 10^{16}$  $10^{15} - 10^{20}$  $10^{12} - 10^{20}$ 



5/5



5 min



Hint

Q Which of the following has the least hysteresis loop area



steel



wrought iron



soft iron



cobalt





Correct



Unattempted



Incorrect



1/5

Q An atom having resultant magnetic field



behaves like a tiny magnet



is called magnetic dipole



is called paramagnetic



all of above

Explanation

Magnetic field is not canceled out.



Correct



Unattempted



Incorrect



2/5

Q A pentavalent impurity in Si



a free electron and a free hole



a free hole



a free electron



No free particle



Correct



Unattempted



Incorrect



3/5

Q The phenomenon in which magnetization reduce to zero by reversing the magnetizing current is called



saturation



coercivity



retentivity



hysteresis loss



Correct



Unattempted



Incorrect



4/5

Q A single domain in ferromagnetic substance contain near y



$10^8 - 10^9$



$10^{12} - 10^{16}$



$10^{15} - 10^{20}$



$10^{12} - 10^{20}$



Correct



Unattempted



Incorrect



5/5

Q Which of the following has the least hysteresis loop area



steel



wrought iron



soft iron



cobalt

Explanation

By hysteresis loop area,

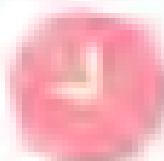


QUIZZES

Practice Test 66



5 Questions



5 min

Topics

Forward biased p-n junction, Reverse biased p-n junction

Start Quiz



1/5



5 min



Hint

Q A potential difference is developed across the depletion region of p-n junction due to



negative ions



positive ions



both positive and negative ions



none of these

2

3

4

5



2/5



5 min



Hint

Q In forward biased situation, as the biasing voltage is increased, the current



does not change



decreases



also increases



none of these





3/5



5 min



Hint

Q The most commonly used semi-conductor is



germanium



silicon



gallium



aluminium





4/5



5 min



Hint

Q Potential difference across two terminal of silicon diode at 300 K is



0.3 V



0.7 V



0.9 V



1.2 V





5/5



5 min



Hint

Q When a pn junction is reverse biased the depletion region is



widened



narrowed



normal



none of these





Correct



Unattempted



Incorrect



1/5

Q A potential difference is developed across the depletion region of p-n junction due to



negative ions



positive ions



both positive and negative ions



none of these

Explanation

Due to initial diffusion of charges



Correct



Unattempted



Incorrect



2/5

Q In forward biased situation, as the biasing voltage is increased, the current



does not change



decreases



also increases



none of these

Explanation

In forward biased, I is proportional to V



Correct



Unattempted



Incorrect



3/5

Q The most commonly used semi-conductor is



germanium



silicon



gallium



aluminium

Explanation

Mostly used in practical devices.



Correct



Unattempted



Incorrect



4/5

Q Potential difference across two terminal of silicon diode at 300 K is:



0.3 V



0.7 V



0.9 V



1.2 V



Correct



Unattempted



Incorrect



5/5

Q When a $p-n$ junction is reverse biased the depletion region is



widened



narrowed



normal



none of these



QUIZZES

Practice Test 67



5 Questions



5 min

Topics

rectification Full wave rect heat on

Start Quiz



1/5



5 min



Hint

Q During the interval $0 \rightarrow \frac{T}{2}$ the forward biased diode offers



very small resistance



very high resistance



very small current flow through it



zero resistance



2/5



5 min



Hint

Q . For rectification we use



transformer



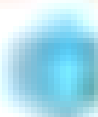
diode



choke



generator





3/5



5 min



Hint

Q . The output voltage of a rectifier is:



smooth



pulsating



perfectly direct



alternating





4/5



5 min



Hint

Q Pulsating DC can be made smooth by using a circuit known as



filter



tank



acceptor



all of these





5/5



5 min



Hint

Q Minimum number of semi-conductor diodes required for full wave rectification are



1



2



3



4





Correct



Unattempted



Incorrect



1/5

Q During the interval $0 \rightarrow \frac{T}{2}$ the forward biased diode offers



very small resistance



very high resistance



very small current flow through it



zero resistance

Explanation

resistance of few ohms in forward bias



Correct



Unattempted



Incorrect



2/5

Q · For rectification we use



transformer



diode



choke



generator



Correct



Unattempted



Incorrect



3/5

Q The output voltage of a rectifier is



smooth



pulsating



perfectly direct



alternating

Explanation

Unidirectional but not smooth



Correct



Unattempted



Incorrect



4/5

Q Pulsating DC can be made smooth by using a circuit known as



filter



tank



acceptor



all of these

Explanation

Convert pulses into constant DC



Correct



Unattempted



Incorrect



5/5

Q Minimum number of semi-conductor diodes required for full wave rectification are



1



2



3



4

Explanation

Full wave rectifier diagram.



QUIZZES

Practice Test 68



5 Questions



5 min

Topics

Forward biased p-n junction, LED, Photo diode, Photo voltaic cell

Start Quiz



1/5



5 min



Hint

Q The light emitting diode emits light when it is



reverse biased



forward biased



both A and B



none of these



2/5



5 min



Hint

Q : Light emitting diode based on



emission of energy in the form of photons



Faradays law



Ionic bonding between p-type and n-type substances



None of these





3/5



5 min



Hint

Q A photo diode can turn its current ON and OFF in



micro seconds



pico seconds



nano seconds



milli seconds





4/5



5 min



Hint

Q A light emitting diode (LED) emits light only when



reverse biased



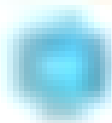
forward biased



unbiased



none of these





5/5



5 min



Hint

Q Which diode works at reverse biasing?



LED



photovoltaic cell



photodiode



silicon diode





Correct



Unattempted



Incorrect



1/5

Q The light emitting diode emits light when it is



reverse biased



forward biased



both A and B



none of these

Explanation

LED operates in forward biased



Correct



Unattempted



Incorrect



2/5

Q · Light emitting diode based on



emission of energy in the form of photons



Faradays law



ionic bonding between p type and n type substances



None of these

Explanation

Working of LED.



Correct



Unattempted



Incorrect



3/5

Q A photo diode can turn its current ON and OFF in



micro seconds



pico seconds



nano seconds



milli seconds



Correct



Unattempted



Incorrect



4/5

Q A light emitting diode (LED) emits light only when



reverse biased



forward biased



unbiased



none of these



Correct



Unattempted



Incorrect



5/5

Q Which diode works at reverse biasing?



LED



photovoltaic cell



photodiode



silicon diode



QUIZZES

Practice Test 69



5 Questions



5 min

Topics

Transistor as an amplifier
Transistor as a switch npn and pnp

Common emitter Common base Common collector
transistor

Start Quiz



1/5



5 min



Hint

Q The transistors with various combinations are widely used as switch
n



rectifier



computers



generators



transformers



2/5



5 min



Hint

Q The reverse current gain of transistor is given by



majority charge carriers



minority charge carriers



both (a) and (b)



none of these





3/5



5 min



Hint

Q In n - p - n transistor current does not flow in the direction from



emitter to collector



emitter to base



base to collector



collector to emitter





4/5



5 min



Hint

Q For normal operation of a transistor, the E – B junction is always,



forward biased



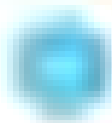
reverse biased



not biased



no effect of biasing





5/5



5 min



Hint

Q A device which converts low voltage or current to high voltage or current is called



transformer



AC-generator



rectifier



amplifier





Correct



Unattempted



Incorrect



1/5

Q The transistors with various combinations are widely used as switch in



rectifier



computers



generators



transformers

Explanation

Transistor are widely used in computers



Correct



Unattempted



Incorrect



2/5

Q The reverse current gain of transistor is given by



majority charge carriers



minority charge carriers



both (a) and (b)



none of these



Correct



Unattempted



Incorrect



3/5

Q In n - p - n transistor current does not flow in the direction from



emitter to collector



emitting base



base to collector



collector to emitter

Explanation

Base to collector is reverse biased



Correct



Unattempted



Incorrect



4/5

Q For normal operation of a transistor, the E – B junction is always;



forward biased



reverse biased



not biased



no effect of biasing

Explanation

Normal biasing configuration diagram



Correct



Unattempted



Incorrect



5/5

Q A device which converts low voltage or current to high voltage or current is called



transformer



AC-generator



rectifier



amplifier

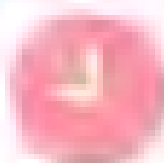


QUIZZES

Practice Test 70

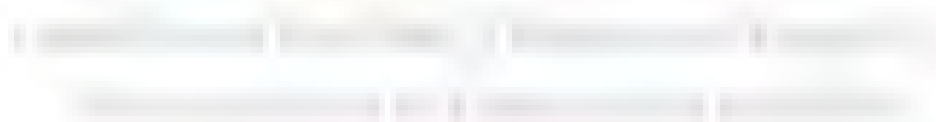


5 Questions



5 min

Topics



Start Quiz



1/5



5 min



Hint

Q : An op-amp can be used as



comparator



night switch



inverting and non inverting amplifier



all of these



2/5



5 min



Hint

Q The whole amplifier is integrated on a



small aluminium chips



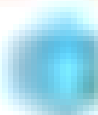
small silicon chips



very large silicon chips



very large germanium chips





3/5



5 min



Hint

Q The open loop gain of op-amp is expressed as



$$A_{OL} = V_o + V$$



$$A_{OL} = \frac{V_o + V}{2}$$



$$A_{OL} = \frac{V_o}{V_+ - V_-}$$



$$A_{OL} = \frac{V_+ - V_-}{V_o}$$





4/5

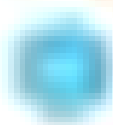


5 min



Hint

Q The open loop gain is of the order of

 10^4  10^5  10^9  10^6 



5/5



5 min



Hint

Q The open loop gain of the amplifier is order of

 10^2  10^8  10^5  10^{12} 



Correct



Unattempted



Incorrect



1/5

Q · An op-amp can be used as



comparator



night switch



Inverting and non-inverting amplifier



all of these

Explanation

Applications of Op-amp



Correct



Unattempted



Incorrect



2/5

Q The whole amplifier is integrated on a



small aluminium chips



small silicon chips



very large silicon chips



very large germanium chips

Explanation

Integrated on small chip



Correct



Unattempted



Incorrect



3/5

Q The open loop gain of op-amp is expressed as



$$A_{OL} = V_o + V_i$$



$$A_{OL} = \frac{V_o + V_i}{2}$$



$$A_{OL} = \frac{V_o}{V_+ - V_-}$$



$$A_{OL} = \frac{V_+ - V_-}{V_o}$$

Explanation

Definition of open loop gain



Correct



Unattempted



Incorrect



4/5

Q The open loop gain is of the order of



10^4



10^5



10^9



10^6

Explanation

Very large open loop gain



Correct



Unattempted



Incorrect



5/5

Q The open loop gain of the amplifier is order of



10^2



10^8



10^5



10^{12}



QUIZZES

Practice Test 71



5 Questions



5 min

Topics

Inverting amplifier

Start Quiz



1/5



5 min



Hint

Q An op-amp has input terminals namely



inverting(-) input



non-inverting (+) input



both A and B



none of these



2/5



5 min



Hint

Q . The operational amplifier is



a high gain amplifier



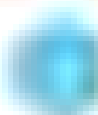
a high -power amplifier



a high resistance amplifier



a low resistance amplifier





3/5



5 min



Hint

Q : If $R_1 = \infty$ and $R_2 = 0$ then gain of non-inverting amplifier is



0



1



infinity



maximum





4/5



5 min



Hint

Q In relation $G = -\frac{R_2}{R_1}$ the negative sign shows the output signal is



180° out of phase with input signal



90° out of phase



180° in phase with input signal



no phase change





5/5



5 min



Hint

Q The voltage gain of an inverting amplifier is



$$\frac{R_1}{R_2}$$



$$\frac{R_1}{R_2}$$



$$\frac{R_2}{R_1}$$



$$1 + \frac{R_2}{R_1}$$





Correct



Unattempted



Incorrect



1/5

Q An op amp has input terminals namely



inverting(-) input



non-inverting (+) input



both A and B



none of these

Explanation

Two input terminals.



Correct



Unattempted



Incorrect



2/5

Q · The operational amplifier is:



a high gain amplifier



a high power amplifier



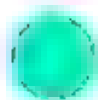
a high resistance amplifier



a low resistance amplifier

Explanation

Gain of 10^5 order



Correct



Unattempted



Incorrect



3/5

Q · If $R_1 = \infty$ and $R_2 = 0$ then gain of non-inverting amplifier is



0



1



infinity



maximum



Correct



Unattempted



Incorrect



4/5

Q In relation $G = -\frac{R_2}{R_1}$, the negative sign shows the output signal is



180° out of phase with Input signal



90° out of phase



180° in phase with input signal



no phase change



Correct



Unattempted



Incorrect



5/5

Q The voltage gain of an inverting amplifier is:



$$\frac{R_1}{R_2}$$



$$\frac{R_1}{R_2}$$



$$\frac{R_2}{R_1}$$



$$1 + \frac{R_2}{R_1}$$

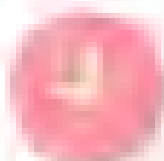


QUIZZES

Practice Test 72



2 Questions



5 min

Topics

Op-Amp as non-inverting amplifier

Start Quiz



1/2



5 min



Hint

Q : For non-inverting amplifier if $R_1 = \infty$ ohm and $R_2 = 0$ ohm, then gain of amplifier is



1



zero



+1



Infinite



2/2



5 min



Hint

Q . The gain of non-inverting amplifier is:



$$1 + \frac{R_2}{R_1}$$



$$1 + \frac{R_1}{R_2}$$



$$- \frac{R_2}{R_1}$$



$$\frac{R_1}{R_2}$$





Correct



Unattempted



Incorrect



1/2

Q : For non-inverting amplifier if $R_1 = \infty$ ohm and $R_2 = 0$ ohm, then gain of amplifier is



1



zero



+1



infinite

Explanation

$$G = 1 + \frac{R_2}{R_1} = 1 + \frac{0}{\infty} = 1$$



Correct



Unattempted



Incorrect



2/2

Q The gain of non-inverting amplifier is



$$1 + \frac{R_2}{R_1}$$



$$1 + \frac{R_1}{R_2}$$



$$-\frac{R_2}{R_1}$$



$$-\frac{R_1}{R_2}$$

Explanation

Gain relation



QUIZZES

Practice Test 73



5 Questions



5 min

Topics

Op-Amp as a Comparator

Start Quiz



1/5



5 min



Hint

Q Op amp Usually requires two power supplies of



unequal voltage and but of opposite polarity



unequal voltage and but of same polarity



equal voltage and but of same polarity



equal voltage and but of opposite polarity

2

3

4

5



2/5



5 min



Hint

Q . The value of LDR depends upon the



intensity of heat



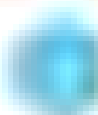
intensity of sound



intensity of light



intensity of voltage applied





3/5



5 min



Hint

Q When we are using op-amp as comparator and $V_- < V_+$ then



$$V_o = +V_{CC}$$



$$V_o < -V_{CC}$$



$$V_o = V_{CC}$$



$$V_o > V_{CC}$$





4/5



5 min



Hint

Q The automatic working of street light is due to



inductor



capacitor



comparator



rectifier





5/5



5 min



Hint

Q Automatic functioning of streetlight can be done by the use of



inductor



capacitor



comparator



soft substances





Correct



Unattempted



Incorrect



1/5

Q Op amp Usually requires two power supplies of



unequal voltage and but of opposite polarity



unequal voltage and but of same polarity



equal voltage and but of same polarity



equal voltage and but of opposite polarity

Explanation

To supply $+V_{CC}$ and $-V_{CC}$ voltages



Correct



Unattempted



Incorrect



2/5

Q · The value of LDR depends upon the



intensity of heat



intensity of sound



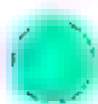
intensity of light



intensity of voltage applied

Explanation

LDR depends upon light



Correct



Unattempted



Incorrect



3/5

Q When we are using op-amp as comparator and $V_- < V_+$ then



$$V_o = +V_{CC}$$



$$V_o < V_{CC}$$



$$V_o = V_{CC}$$



$$V_o > -V_{CC}$$

Explanation

Output is equal to greater input voltage



Correct



Unattempted



Incorrect



4/5

Q The automatic working of streets light is due to



inductor



capacitor



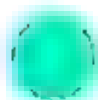
comparator



rectifier

Explanation

OP-amp working as comparator



Correct



Unattempted



Incorrect



5/5

Q Automatic functioning of street light can be done by the use of



inductor



capacitor



comparator



soft substances

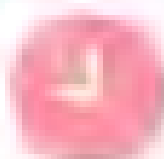


QUIZZES

Practice Test 74



5 Questions



5 min

Topics

1. English 2. Chemistry 3. Biology 4. Physics 5. Mathematics

Start Quiz



1/5



5 min



Hint

Q The values 1 and 0 are designated as:



binary values



continuous values



decimal values



none of these



2/5



5 min



Hint

Q If both the inputs given to a gate are 1, such that the output is 0 then it is



NAND gate



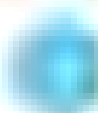
NOR gate



XOR gate



all of these





3/5



5 min



Hint

Q NOR gate is used to invert the output of



OR gate



AND gate



XOR gate



NAND gate





4/5



5 min



Hint

Q The electric circuit wh ch gives the Invers on



XNOR gate



OR gate



AND gate



NOT gate





5/5



5 min



Hint

Q. $X = \overline{A + B}$ is the mathematical notation for



OR gate



NOR gate

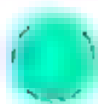


NAND gate



AND gate





Correct



Unattempted



Incorrect



1/5

Q The values 1 and 0 are designated as.



binary values



continuous values



decimal values



none of these

Explanation

Boolean variable can take up 1 or 0 as binary value.



Correct



Unattempted



Incorrect



2/5

Q If both the inputs given to a gate are 1, such that the output is 0 then it is



NAND gate



NOR gate



XOR gate



all of these

Explanation

By truth tables



Correct



Unattempted



Incorrect



3/5

Q NOR gate is used to invert the output of



OR gate



AND gate



XOR gate



NAND gate

Explanation

NOT gate at the output of OR gate



Correct



Unattempted



Incorrect



4/5

Q The electric circuit which gives the invers on



XNOR gate



OR gate



AND gate



NOT gate



Correct



Unattempted



Incorrect



5/5

Q. $X = A + B$ is the mathematical notation for



OR gate



NOR gate



NAND gate



AND gate

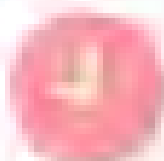


QUIZZES

Practice Test 75



3 Questions



5 min

Topics

[Start Quiz](#)



1/3



5 min



Hint

Q During day time, when light is falling upon LDR, R_L is



large



sem conductor



insulator



none



2/3



5 min



Hint

Q Logic gates can control some physical parameters like



temperature, pressure



current, voltage



resistance, inductance



capacitance, impedance





3/3



5 min



Hint

Q The devices which are required to convert various physical quantities into electric voltage are called



filters



rectifiers



amplifiers



sensors





Correct



Unattempted



Incorrect



1/3

Q During day time, when light is fall ng upon LDR, R_L is



large



sem conductor



insu ator



none

Explanation

Show low resistance



Correct



Unattempted



Incorrect



2/3

Q Logic gates can control some physical parameters like



temperature, pressure



current, voltage



res stance, inductance



capacitance, Impedance

Explanation

Control physical parameters by sensors and gates



Correct



Unattempted



Incorrect



3/3

Q The devices which are required to convert various physical quantities into electric voltage are called



filters



rectifiers



amplifiers



sensors

Explanation

Definition of sensors



QUIZZES

Practice Test 76



5 Questions



5 min

Topics

relative Motion

[Start Quiz](#)



1/5



5 min



Hint

Q Mathematical foundations for electromagnetic waves were provided by



Hertz



Ampere



Maxwell



Newton



2/5



5 min



Hint

Q . All motions are



Uniform



Relative



Absolute



Variable





3/5



5 min



Hint

Q . Newtons laws of motion are valid



In non-Inertial frame



in inertial frame



Both (a) and (b)



None of these





4/5



5 min



Hint

Q : The concept of direction is purely



Relative



Absolute



Relative to the motion



None of these





5/5



5 min



Hint

Q Any coordiante system re.ative to which results are taken is known as



Zero point



Frame of reference



infinity point



None of these





Correct



Unattempted



Incorrect



1/5

Q Mathematical foundations for electromagnetic waves were provided by



Hertz



Ampere



Maxwell



Newton

Explanation

Maxwell equations



Correct



Unattempted



Incorrect



2/5

Q All motions are



Uniform



Relative



Abso ute



Variable

Explanation

Motion with respect of certain frame of reference



Correct



Unattempted



Incorrect



3/5

Q · Newton's laws of motion are valid



in non-inertial frame



in inertial frame



Both (a) and (b)



None of these

Explanation

Non-accelerating frame.



Correct



Unattempted



Incorrect



4/5

Q · The concept of direction is purely



Relative



Abso ute



Relative to the motion



None of these

Explanation

With respect to frame of reference



Correct



Unattempted



Incorrect



5/5

Q Any coordinate system relative to which results are taken is known as



Zero point



Frame of reference



Infinity point



None of these

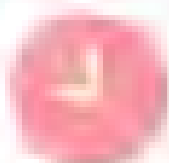


QUIZZES

Practical Test 77



5 Questions



5 min

Topics

Bohr's Model of hydrogen atom Quantized

of spectrum

Start Quiz



1/5



5 min



Hint

Q The numerical value of ground state energy of an electron in an orbit is the measure of



Excitation energy



Excitation potential



ionization energy



None of these

2

3

4

5



2/5



5 min



Hint

Q The radius of 1st Bohr's orbit for hydrogen is



0.053 nm



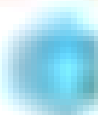
0.53 nm



0.53 m



None of these





3/5



5 min



Hint

Q According to Bohr's 2nd postulate, angular momentum of an electron in one of its allowed orbit is given by



$$mr = \frac{nh}{2\pi}$$



$$mv = \frac{nh}{2\pi}$$



$$mvr = \frac{h}{2\pi}$$



$$mvr = \frac{nh}{2\pi}$$





4/5



5 min



Hint

Q If electron jumps from second orbit to first orbit in hydrogen atom it emits photon of



3.40 eV



10.20 eV



13.6 eV



3.8 eV





5/5



5 min



Hint

Q Which spectrum of hydrogen carries highest frequency?



Lyman



Balmer



Paschen



Bracket





Correct



Unattempted



Incorrect



1/5

Q The numerical value of ground state energy of an electron in an orbit is the measure of



Excitation energy



Excitation potential



Ionization energy



None of these

Explanation

Energy required to take it to infinity



Correct



Unattempted



Incorrect



2/5

Q The radius of 1st Bohr's orbit for hydrogen is



0.053 nm



0.53 nm



0.53 m



None of these

Explanation

$$r_1 = 0.053nm$$



Correct



Unattempted



Incorrect



3/5

Q According to Bohr's 2nd postulate, angular momentum of an electron in one of its allowed orbit is given by



$$mr = \frac{nh}{2\pi}$$



$$mv = \frac{nh}{2\pi}$$



$$mvr = \frac{h}{2\pi}$$



$$mvr = \frac{nh}{2\pi}$$

Explanation

Bohr's theory



Correct



Unattempted



Incorrect



4/5

Q If electron jumps from second orbit to first orbit in hydrogen atom it emits photon of



3.40 eV



10.20 eV



13.6 eV



3.8 eV

Explanation

$$\Delta E = -13.6 - (-3.40) = -10.20 \text{ eV}$$



Correct



Unattempted



Incorrect



5/5

Q Which spectrum of hydrogen carries highest frequency?



Lyman



Balmer



Pashen



Bracket

Explanation

Belongs to ultraviolet radiations.

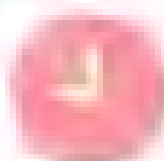


QUIZZES

Practice Test 78



5 Questions



5 min

Topics

Start Quiz



1/5



5 min



Hint

Q When x-rays are passed through aluminium sheets, what happens to their thickness



Decreases



Increases



Remain the same



None of these



2/5



5 min



Hint

Q The emission of photons by a metal when electrons are incident is called



Compton effect



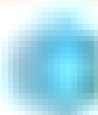
Diffraction



X-rays production



All of these





3/5



5 min



Hint

Q During production of x rays, when the cathode is heated by the filament it emits



Protons



Electrons



Neutrons



All of these





4/5



5 min



Hint

Q X-ray diffraction reveals that these are



particle type



wave type



both wave and particle



none of above





5/5



5 min



Hint

Q In CAT scanning, X-ray is passed through patient body is shape of



Straight line



Fanned out array



Circular array



Rectangular array





Correct



Unattempted



Incorrect



1/5

Q When x-rays are passed through aluminium sheets, what happens to their thickness



Decreases



Increases



Remain the same



None of these

Explanation

No effect on thickness



Correct



Unattempted



Incorrect



2/5

Q The emission of photons by a metal when electrons are incident is called



Compton effect



Diffraction



X-rays production



All of these

Explanation

X-ray production



Correct



Unattempted



Incorrect



3/5

Q During production of x-rays, when the cathode is heated by the filament it emits



Protons



Electrons



Neutrons



All of these

Explanation

Emission of electrons by heated filament



Correct



Unattempted



Incorrect



4/5

Q X-ray diffraction reveals that these are



particle type



wave type



both wave and particle



none of above

Explanation

Diffraction is wave behaviour



Correct



Unattempted



Incorrect



5/5

Q In CAT scanning, X-ray is passed through patient body is shape of



Straight line



Fanned out array



Circular array



Rectangular array

Explanation

Thin fan shaped beam

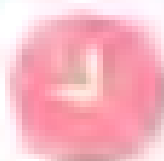


QUIZZES

Practice Test 79



5 Questions



5 min

Topics

Uncertainty within the atom

[Start Quiz](#)



1/5



5 min



Hint

Q The duration of a laser pulse is 10^{-8} sec. The uncertainty in its energy will be:



$$\Delta E = \frac{h}{\Delta t}$$



$$\Delta E = h \Delta t$$



$$\Delta E = \frac{\Delta t}{h}$$



None of these

2

3

4

5



2/5

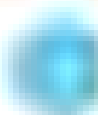


5 min



Hint

Q The duration of a laser pulse is 10^{-8} sec. The uncertainty in its energy will be:

 $10.500 \times 10^{-62} \text{ J}$  $6.625 \times 10^{-28} \text{ J}$  $6.625 \times 10^{-26} \text{ J}$  $1.050 \times 10^{-28} \text{ J}$ 



3/5

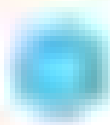


5 min



Hint

Q The maximum uncertainty in the measurement of position of an electron inside the nucleus is of the order of

 10^{-8}m  10^{-12}m  10^{-14}m  10^{-16}m 



4/5



5 min



Hint

Q . The speed of electrons in atom is



Less than speed of light



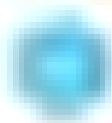
Greater than speed of light



Equal to speed of light



None of these





5/5



5 min



Hint

Q For an atom Δx is given as 5×10^{-11} m. The electron to remain inside the nucleus then its vibration velocity should be



less than the speed of light



equal to the speed of light



greater than the speed of light



double than the speed of light





Correct



Unattempted



Incorrect



1/5

Q The duration of a laser pulse is 10^{-8} sec. The uncertainty in its energy will be



$$\Delta E = \frac{h}{\Delta t}$$



$$\Delta E = h \Delta t$$



$$\Delta E = \frac{\Delta t}{h}$$



None of these

Explanation

$$(\Delta E)(\Delta t) = h$$



Correct



Unattempted



Incorrect



2/5

Q The duration of a laser pulse is 10^{-8} sec. The uncertainty in its energy will be



10.500×10^{-62} J



6.625×10^{-28} J



6.625×10^{-26} J



1.050×10^{-28} J

Explanation

$$\Delta E = \frac{h}{\Delta t} = \frac{6.625 \times 10^{-34} \text{ Js}}{10^{-8} \text{ s}} = 6.625 \times 10^{-26} \text{ J}$$



Correct



Unattempted



Incorrect



3/5

Q The maximum uncertainty in the measurement of position of an electron inside the nucleus is of the order of



10^{-8}m



10^{-12}m



10^{-14}m



10^{-16}m

Explanation

Diameter of nucleus (10^{-14}m)



Correct



Unattempted



Incorrect



4/5

Q · The speed of electrons in atom is



Less than speed of light



Greater than speed of light



Equal to speed of light



None of these

Explanation

$$\Delta v = 1.46 \times 10^7 \text{ ms}^{-1}$$



Correct



Unattempted



Incorrect



5/5

Q For an atom Δx is given as $5 \times 10^{-11} \text{ m}$. The electron to remain inside the nucleus then its vibration velocity should be



less than the speed of light



equal to the speed of light



greater than the speed of light



double than the speed of light

Explanation

$$\Delta v = 7.3 \times 10^{10} \text{ ms}^{-1}$$



QUIZZES

Practice Test 80



5 Questions



5 min

Topics

over Helium-Neon laser , Uses of laser

Start Quiz



1/5



5 min



Hint

Q . Reflecting mirrors in laser is used to



Further stimulation



For producing more energetic lasers



Both (a) and (b)



None of these



2/5



5 min



Hint

Q In He-Ne laser, the laser action is produced by



Ne only



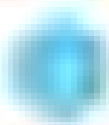
He-Ne both



Electrons of He



Electrons of Ne





3/5



5 min



Hint

Q . Life time of metastable states is

 10^6 sec or more 10^{-3} sec or more 10^{-5} sec or more

None of these





4/5



5 min



Hint

Q The Idea of laser device was first introduced by C H Townes and Arthur Schawlow is



1972



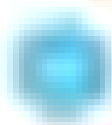
1965



1958



1913





5/5



5 min



Hint

Q Helium – Neon laser discharge tube contains neon



15%



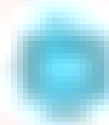
25%



82%



85%





Correct



Unattempted



Incorrect



1/5

Q · Reflecting mirrors in laser is used to.



Further stimulation



For producing more energetic lasers



Both (a) and (b)



None of these

Explanation

Stimulate more atoms



Correct



Unattempted



Incorrect



2/5

Q In He-Ne laser, the laser action is produced by



Ne only



He-Ne both



Electrons of He



Electrons of Ne

Explanation

Ne is lasing medium



Correct



Unattempted



Incorrect



3/5

Q · Life time of metastable states is

 10^6 sec or more 10^3 sec or more 10^{-5} sec or more

None of these

Explanation

(10^{-3} sec) time to reside in metastable state



Correct



Unattempted



Incorrect



4/5

Q The idea of laser device was first introduced by C H Townes and
Authors Schowlan is



1972



1965



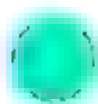
1958



1913

Explanation

Laser idea.



Correct



Unattempted



Incorrect



5/5

Q Helium – Neon laser discharge tube contains neon



15%



25%



82%



85%

Explanation

15% Ne

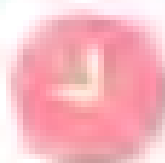


QUIZZES

Practice Test 81



5 Questions



5 min

Topics

Chemistry | Biology | Physics | English

Start Quiz



1/5



5 min



Hint

Q The energy required to break up helium nucleus into two protons and two neutrons is



28.2 eV



28.2 KeV



28.2 MeV



None of these



2/5



5 min



Hint

Q. The mass defect is defined as



$$\Delta m = Zm_p + A + Zm_n - m_{\text{nucleus}}$$



$$\Delta m = Zm_p + A - Zm_n - m_{\text{nucleus}}$$



$$\Delta m = Zm_p + A - Zm_n + m_{\text{nucleus}}$$



$$\Delta m = Zm_p + A + Zm_n + m_{\text{nucleus}}$$





3/5



5 min



Hint

Q The mass defect per nucleon is called



Binding energy of nucleus



Packing fraction



Energy fraction



Binding fraction





4/5



5 min



Hint

Q Binding energy for deuteron nucleus is given by



2.8 MeV



2.23 MeV



2.28 MeV



2.25 MeV





5/5



5 min



Hint

Q . Geiger counter can be used to detect



charge



mass

 $\frac{\text{Charge}}{\text{Mass}}$ ratio

nuclear radiation





Correct



Unattempted



Incorrect



1/5

Q The energy required to break up helium nucleus into two protons and two neutrons is



28.2 eV



28.2 KeV



28.2 MeV



None of these



Correct



Unattempted



Incorrect



2/5

Q · The mass defect is defined as



$$\Delta m = Zm_p + A + Zm_n - m_{\text{nucleus}}$$



$$\Delta m = Zm_p + (A - Z)m_n - m_{\text{nucleus}}$$



$$\Delta m = Zm_p + A - Zm_n + m_{\text{nucleus}}$$



$$\Delta m = Zm_p + (A + Z)m_n + m_{\text{nucleus}}$$



Correct



Unattempted



Incorrect



3/5

Q The mass defect per nucleon is called



Binding energy of nucleus



Packing fraction



Energy fraction



Binding fraction



Correct



Unattempted



Incorrect



4/5

Q Binding energy for deuteron nucleus is given by



2.8 MeV



2.23 MeV



2.28 MeV



2.25 MeV



Correct



Unattempted



Incorrect



5/5

Q Geiger counter can be used to detect



charge



mass



$\frac{\text{Charge}}{\text{Mass}}$ ratio



nuclear radiation



QUIZZES

Practice Test 82



5 Questions



5 min

Topics

Start Quiz



1/5



5 min



Hint

Q Which of the following have similar nature as that of electrons:

 β - rays γ - rays α - rays x - rays



2/5



5 min



Hint

Q Which of the reaction shows the emission of α - particles



None of these





3/5



5 min



Hint

Q . Radioactivity was discovered by



Huygens



Henry Becquere



Marie Curie



Einstein





4/5



5 min



Hint

Q When α -particle is emitted from any nucleus, its mass number _____ and its charge number _____



increase by 2, increases by 2



decrease by 4, increases by 2



decreases by 4, decreases by 2



decreases by 4, decreases by 4





5/5



5 min



Hint

Q • The mass of β particle is equal to the mass of



proton



neutron



electron



photon





Correct



Unattempted



Incorrect



1/5

Q Which of the following have similar nature as that of electrons.



β - rays



γ - rays



α - rays



x - rays



Correct



Unattempted



Incorrect



2/5

Q . Which of the reaction shows the emission of α - particles



None of these



Correct



Unattempted



Incorrect



3/5

Q · Radioactivity was discovered by



Huygens



Henry Becquere.



Marie Curie



Einstein



Correct



Unattempted



Incorrect



4/5

Q When α particle is emitted from any nucleus, its mass number _____ and its charge number _____.



increase by 2, increases by 2



decrease by 4, increases by 2



decreases by 4, decreases by 2



decreases by 4, decreases by 4



Correct



Unattempted



Incorrect



5/5

Q . The mass of β particle is equal to the mass of



proton



neutron



electron



photon



QUIZZES

Practice Test 83



5 Questions



5 min

Topics

Half life

[Start Quiz](#)



1/5



5 min



Hint

Q The reciprocal of decay constant (λ) of a radioactive element is



Average life



Half life



Mean life



None of these

2

3

4

5



2/5



5 min



Hint

Q The decay constant can be defined as



$$\lambda = -\frac{\frac{\Delta N}{N}}{\Delta t}$$



$$\lambda = -\frac{N}{\frac{\Delta N}{\Delta t}}$$



$$\lambda = \frac{N}{\frac{\Delta N}{\Delta t}}$$



$$\lambda = \frac{\frac{\Delta N}{N}}{\Delta t}$$





3/5



5 min



Hint

Q The ratio of the fraction of decaying atoms per unit time is called



Half life



Decay time



Decay constant



Decay element





4/5



5 min



Hint

Q Half-life of a radioactive element $T_{1/2}$ is given by



$$0.693\lambda$$



$$\frac{0.693}{\lambda}$$



$$\frac{\lambda}{0.693}$$



$$\frac{1}{0.693\lambda}$$





5/5



5 min



Hint

Q The decay constant of a radioactive element depends upon



nature of material



temperature of material



pressure on material



dimensions of material





Correct



Unattempted



Incorrect



1/5

Q . The reciprocal of decay constant (λ) of a radioactive element is



Average life



Half life



Mean life



None of these



Correct



Unattempted



Incorrect



2/5

Q The decay constant can be defined as



$$\lambda = - \frac{\frac{\Delta N}{N}}{\Delta t}$$



$$\lambda = - \frac{\frac{N}{\Delta N}}{\Delta t}$$



$$\lambda = \frac{\frac{N}{\Delta N}}{\Delta t}$$



$$\lambda = \frac{\frac{\Delta N}{N}}{\Delta t}$$



Correct



Unattempted



Incorrect



3/5

Q The ratio of the fraction of decaying atoms per unit time is called



Half life



Decay time



Decay constant



Decay element



Correct



Unattempted



Incorrect



4/5

Q : Half-life of a radioactive element $T_{1/2}$ is given by:



$$0.693\lambda$$



$$\frac{0.693}{\lambda}$$



$$\frac{\lambda}{0.693}$$



$$\frac{1}{0.693\lambda}$$



Correct



Unattempted



Incorrect



5/5

Q The decay constant of a radioactive element depends upon



nature of material



temperature of material



pressure on material



dimensions of material

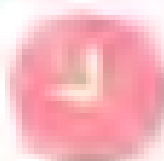


QUIZZES

Practice Test 84



5 Questions



5 min

Topics

interaction of radiations with matter

[Start Quiz](#)



1/5



5 min



Hint

Q When a certain radiation passes through matters it lose energy due to



Ionization of material atoms due to direct collision



Ionization of material atoms due to electrostatic



Excitation of material atoms



Any of these



2/5



5 min



Hint

Q The magnitude of range of radiation particle through matter depends upon



its mass



its charge



its mass and charge



all of the above





3/5



5 min



Hint

Q The Intensity I_0 of a beam after passing through solids is given by



$$I = I_0 e^{-\mu x}$$



$$I = I_0 x$$



$$I = I_0 e^{\mu x}$$



$$I = I_0 x^2$$





4/5



5 min



Hint

Q The range of particle depends upon the factor



Charge, mass and energy of particle



Density of medium



Ionization potential of the atoms



All of these





5/5



5 min



Hint

Q Which particle has larger range in air

 α particle γ particle β -particle

neutron





Correct



Unattempted



Incorrect



1/5

Q When a certain radiation passes through matters it lose energy due to



ionization of material atoms due to direct collision



ionization of material atoms due to electrostatic



Excitation of material atoms



Any of these



Correct



Unattempted



Incorrect



2/5

Q The magnitude of range of radiation particle through matter depends upon



its mass



its charge



its mass and charge



all of the above



Correct



Unattempted



Incorrect



3/5

Q The intensity I_0 of a beam after passing through solids is given by



$$I = I_0 e^{-\mu x}$$



$$I = I_0 x$$



$$I = I_0 e^{\mu x}$$



$$I = I_0 x^2$$



Correct



Unattempted



Incorrect



4/5

Q The range of particle depends upon the factor



Charge, mass and energy of particle



Density of medium



ionization potential of the atoms



All of these



Correct



Unattempted



Incorrect



5/5

Q Which particle has larger range in air



α particle



γ particle



β -particle



neutron

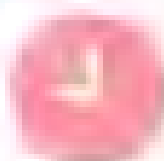


QUIZZES

Practice Test 85



5 Questions



5 min

Topics

Cellular Respiration | Photosynthesis | Metabolism | Enzymes
| Genetics | Evolution | Ecology | Cell Biology | Microbiology

Start Quiz



1/5



5 min



Hint

Q Examples of radiation detector case



Geiger Muller counter



Wilson cloud chamber



Solid state detector



All of the above



2/5



5 min



Hint

Q . A Wilson could chamber uses



Super heated liquid



Vapors



Super saturated vapors



Saturated vapors





3/5



5 min



Hint

Q The fact that the super saturated vapors condense preferentially on on is used to detect the radiation of the device is called



Nuclear Reactor



G M Counter



Solid State Detector



Wilson Cloud Chamber





4/5



5 min



Hint

Q . Geiger counter can be used to detect



charge



mass

 $\frac{\text{Charge}}{\text{Mass}}$ ratio

nuclear radiation





5/5



5 min



Hint

Q Energy needed to produced an electron-hole pair in solid state detector s



1 to 2 eV



3 to 4 eV



6 to 7



8 to 9 eV





Correct



Unattempted



Incorrect



1/5

Q Examples of radiation detector case



Geiger Muller counter



Wilson cloud chamber



Solid state detector



All of the above



Correct



Unattempted



Incorrect



2/5

Q - A Wilson could chamber uses



Super heated liquid



Vapors



Super saturated vapors



Saturated vapors



Correct



Unattempted



Incorrect



3/5

Q The fact that the super saturated vapors condense preferentially on
on is used to detect the radiation of the device is called



Nuclear Reactor



G M Counter



Solid State Detector



Wilson Cloud Chamber



Correct



Unattempted



Incorrect



4/5

Q Geiger counter can be used to detect



charge



mass



$\frac{\text{Charge}}{\text{Mass}}$ ratio



nuclear radiation



Correct



Unattempted



Incorrect



5/5

Q Energy needed to produced an electron-hole pair in solid state detector s



1 to 2 eV



3 to 4 eV



6 to 7



8 to 9 eV



QUIZZES

Practice Test 86



3 Questions



5 min

Topics

Nuclear reaction

[Start Quiz](#)



1/3



5 min



Hint

Q The capture of a neutron by a nucleus results in the formation of



Deuteron



Proton



Helium



Radio isotope



2/3



5 min



Hint

Q - Mass of ${}_1^1\text{H}$ is



1.0078 u



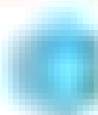
16.999 u



4.000 u



14.00034 u





3/3



5 min



Hint

Q Rutherford performed an experiment on the nuclear radiation in



1900



1919



1926



1912





Correct



Unattempted



Incorrect



1/3

Q The capture of a neutron by a nucleus results in the formation of



Deuteron



Proton



Helium



Radio Isotope



Correct



Unattempted



Incorrect



2/3

Q. Mass of ${}_1^1\text{H}$ is



1.0078 u



16.999u



4.000u



14.00034 u



Correct



Unattempted



Incorrect



3/3

Q Rutherford performed an experiment on the nuclear radiation in



1900



1919



1926



1912

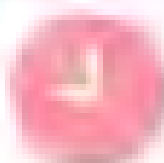


QUIZZES

Practice Test 87



5 Questions



5 min

Topics

Nuclear fission Nuclear Reactor

Start Quiz



1/5



5 min



Hint

Q The process in which a heavy nucleus is broken into two lighter nuclei with the release of energy is called



Nuclear fusion



Nuclear fission



Chain reaction



None of these

2

3

4

5



2/5



5 min



Hint

Q The first atomic reactor was introduced by



Currie



Enrico Fermi



Newton



Bohr





3/5



5 min



Hint

Q During the fission reaction the amount of energy released per nucleon is about



0.9 MeV



7.7 MeV



28 MeV



200 MeV





4/5



5 min



Hint

Q The most important and vital part of a reactor is called



Core



Moderator



Condenser



Turbine





5/5



5 min



Hint

Q In a fast (nuclear) reactor a ${}_{92}^{238}\text{U}$ nucleus absorbs a fast neutron and is ultimately transformed into _____ by emitting two β particles

 ${}_{92}^{238}\text{U}$  ${}_{94}^{242}\text{Pu}$  ${}_{82}^{206}\text{Pb}$  ${}_{90}^{206}\text{Po}$ 



Correct



Unattempted



Incorrect



1/5

Q The process in which a heavy nucleus is broken into two lighter nuclei with the release of energy is called



Nuclear fusion



Nuclear fission



Chain reaction



None of these



Correct



Unattempted



Incorrect



2/5

Q The first atomic reactor was introduced by



Curie



Enrico Fermi



Newton



Bohr



Correct



Unattempted



Incorrect



3/5

Q During the fission reaction the amount of energy released per nucleon is about



0.9MeV



7.7MeV



28MeV



200MeV



Correct



Unattempted



Incorrect



4/5

Q The most important and vital part of a reactor is called



Core



Moderator



Condenser



Turbine



Correct



Unattempted



Incorrect



5/5

Q In a fast (nuclear) reactor a $^{238}_{92}\text{U}$ nucleus absorbs a fast neutron and is ultimately transformed into _____ by emitting two β particles.



$^{238}_{92}\text{U}$



$^{239}_{94}\text{Pu}$



$^{208}_{82}\text{Pb}$



$^{208}_{80}\text{Pb}$

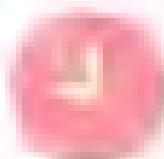


QUIZZES

Practice Test 88



5 Questions



5 min

Topics

Electron reaction

[Start Quiz](#)



1/5



5 min



Hint

Q During fusion of hydrogen into helium



Energy is released



Energy is absorbed



Mass is increased due to energy absorption



Mass is reduced due to energy released



2/5



5 min



Hint

Q. 1 Sv -



1 Gy x RBE



2 Gy x RBE



1 Gy/RBE



RBE/1 Gy





3/5



5 min



Hint

Q 1 Curie is equal to _____ disintegration per second

 3.7×10^{10}  5.7×10^{10}  3.7×10^{20}  3.7×10^{13} 



4/5



5 min



Hint

Q The energy released by fusion of two deuterons into helium nucleus is about



24 MeV



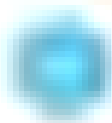
200 MeV



1.02 MeV



7.7 MeV





5/5



5 min



Hint

Q Which nuclear reaction takes place in the Sun and Stars?



fission



chemical



fusion



mechanical





Correct



Unattempted



Incorrect



1/5

Q During fusion of hydrogen into helium



Energy is released



Energy is absorbed



Mass is increased due to energy absorption



Mass is reduced due to energy released



Correct



Unattempted



Incorrect



2/5

Q 1 Sv -



1 Gy x RBE



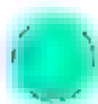
2 Gy x RBE



1 Gy/RBE



RBE/1 Gy



Correct



Unattempted



Incorrect



3/5

Q · 1 Curie is equal to _____ disintegration per second



3.7×10^{10}



5.7×10^{10}



3.7×10^{20}



3.7×10^{13}



Correct



Unattempted



Incorrect



4/5

Q The energy released by fusion of two deuterons into helium nucleus is about



24 MeV



200 MeV



1.02 MeV



7.7 MeV



Correct



Unattempted



Incorrect



5/5

Q Which nuclear reaction takes place in the Sun and Stars?



fission



chemical



fusion



mechanical



QUIZZES

Practice Test 89



5 Questions



5 min

Topics

and forces of nature

Start Quiz



1/5



5 min



Hint

Q The number of fundamental forces present in nature are



3



2



5



4



2/5



5 min



Hint

Q A pair of quark and anti quark makes a



Meson



Bargon



Photon



Proton





3/5



5 min



Hint

Q Electromagnetic and weak forces were unified by



Weinberg



Glashow



Abdus Salam



None of these





4/5



5 min



Hint

Q Dr Abdus Salam unified electromagnetic force and



weak nuclear force



strong nuclear force



magnetic force



gravitational force





5/5



5 min



Hint

Q Particles that experience the strong nuclear force



hadrons



leptons



photons



quarks





Correct



Unattempted



Incorrect



1/5

Q The number of fundamental forces present in nature are



3



2



5



4



Correct



Unattempted



Incorrect



2/5

Q A pair of quark and anti quark makes a



Meson



Bargon



Photon



Proton



Correct



Unattempted



Incorrect



3/5

Q Electromagnetic and weak forces were unified by



Weinberg



Glashow



Abdus Salam



None of these



Correct



Unattempted



Incorrect



4/5

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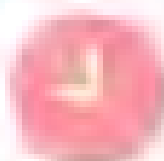


QUIZZES

Practice Test 90



5 Questions



5 min

Topics

Building blocks of matter

Start Quiz



1/5



5 min



Hint

Q A proton consists of quarks which are



two up, one down



one up, two down



all up



all down



2/5



5 min



Hint

Q . Types of quark are



2



4



6



8





3/5



5 min



Hint

Q Which of the following belong to "hadrons" group



proton



electron



muons



neutrinos





4/5



5 min



Hint

Q . Three quarks make a



proton



electron



baryon



neutron





5/5



5 min



Hint

Q . Electrons are



hadrons



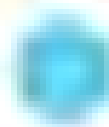
leptons



quarks



baryons





Correct



Unattempted



Incorrect



1/5

Q A proton consists of quarks which are



two up, one down



one up, two down



all up



all down



Correct



Unattempted



Incorrect



2/5

Q : Types of quark are:



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Correct



Unattempted



Incorrect



3/5

Q : Which of the following belong to "hadrons" group



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Unattempted



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4/5

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Unattempted



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5/5

Q : Electrons are:



hadrons



leptons



quarks



baryons